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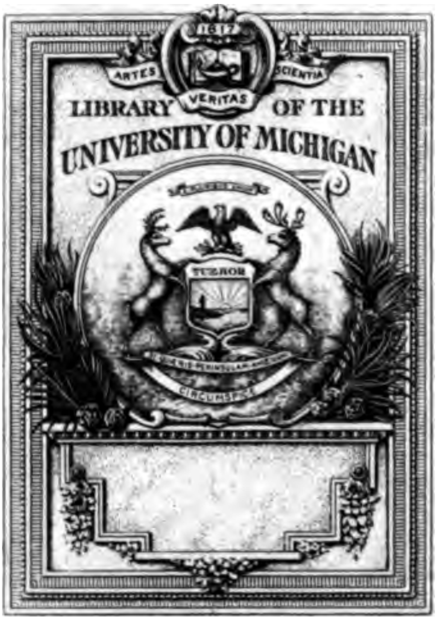

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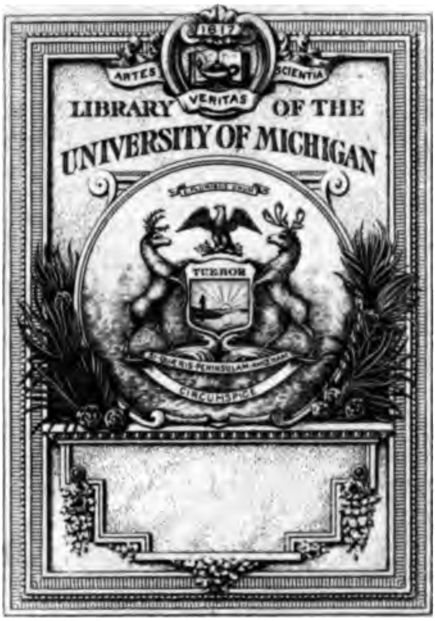

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OF THE

BUREAU OF EDUCATION.

No. 1—1885.

CITY SCHOOL SYSTEMS IN THE UNITED STATES;
BY JOHN D. PHILBRICK, LL. D.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1885.

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LETTER.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., January 17, 1885.

SIR: It is frequently remarked by students of political history that some of the greatest defects of our form of government are developed in connection with municipal administration. Fortunately, in spite of this fact, some of the best school work in our country is found in the cities.

This is due very much to the comparatively early separation of school administration from other municipal business. In general the theory of this municipal educational administration has embraced a board of education, vested by the laws of the State with ample powers, selected from among the people of the city, so that the actual sentiments of the community shall be faithfully represented in the administration of the schools. The members of these boards generally perform their task gratuitously and have now well-nigh universally adopted the practice of committing the execution of their orders to one or more persons known as superintendents and assistants, who, by their abilities, attainments, and experience, are specially fitted for this supervisory work. Fortunately, some of the most eminent men of the land have given their most faithful service freely as members of boards of education, and it is a matter for still further gratitude and congratulation that some of the most eminent educators of the land or world have been engaged as superintendents of instruction of our cities.

Among the most prominent of these, earliest in the field, was John D. Philbrick, LL. D., who became the superintendent of Boston schools January 10, 1857, having previously been a teacher in those schools, principal of the Connecticut State Normal School, and superintendent of public instruction for that State. It is acknowledged the world over that to him is largely and specially due the excellence of the Boston schools. A thorough man of affairs, accurate and broad in his scholarship, in the fullest sympathy with American institutions and ideas, he not only watched and guided the Boston schools that grew under his hands for twenty years, but, by travels and studies in different parts of this country and during two visits to Europe, one of which included official duties in connection with the exhibition at Vienna and the other the special organization, care, and management of the American exhibition of education in Paris in 1878, he had the rarest opportunities for extensive personal observation elsewhere in school matters and for philosophical deduction therefrom. In his retirement and with his accumulations of literature, of observation, and of experience around him, in spite of a progressive disease of the eye that threatens complete blindness, he has consented at my request to prepare the following report on education in cities, which I hereby recommend for publication. Every one will see that, to secure the fullest benefit to the millions interested in the administration of education in our cities and the millions yet unborn to be affected by it, the writer of this report, possessed of rare qualifications for the undertaking, should be accorded the largest freedom in bringing out his philosophical conclusions, whether they agree or not with the opinions formed in this Office; and I may add that I know of no more valuable study of city systems of public instruction than that presented in the following pages.

I have the honor to be, very respectfully, your obedient servant,

JOHN EATON,
Commissioner.

The Hon. SECRETARY OF THE INTERIOR.

Publication approved.

H. M. TELLER,
Secretary.

CITY SCHOOL SYSTEMS IN THE UNITED STATES.

INTRODUCTION—DESIGN AND SCOPE OF THE REPORT.

An eminent pedagogue and savant[1] of France finds one of the principal causes of the supremacy of Germany in the matter of popular education, in the exceptional division of the nation into so many independent sovranties. A sort of emulation was created among them, and thus the improvements realized at any one point were gradually adopted by the entire nation. The same emulation continues to this day. In like manner an emulation has been created among our cities which has greatly promoted educational progress; a constant comparison is kept up by interchanges of visits and reports, and especially by the publications of the National Bureau of Education, the result of this comparison being to hasten the elimination of faults and the adoption of improvements of every description.

The object of this report is to strengthen this tendency to uniformity of excellence by a general survey, historical, critical, and comparative, of certain features and characteristics of our city systems of schools, more especially those features and characteristics in which there is found the greatest diversity in respect to progress towards the ideal standard. Comparison through historical criticism is the method of educational progress, and this is the method which it is proposed to follow in the present review. The aim is to set forth, so far as practicable within the assigned limits, such facts, figures, and opinions as may best enable each city to profit by improvements realized by other cities. It is not intended, however, to limit our observation to the systems of our own country. The educational experience of the civilized world is common property, and, while there is no danger of overrating the value and importance of home comparison, international comparison as illustrated in universal expositions is, perhaps, still more fruitful in good results. What the scientific educator needs to know is this, namely, the best things that have been thought and done relating to the matters in which he is concerned; not merely the best things that have been thought and done in his own neighborhood and in his own State, but in foreign countries as well, and especially in those countries which hold the first rank in civilization. The objector who tells us that the educational experience and opinion of foreign countries are valueless to us because of the divergence between their civilizations and ours, betrays his ignorance and reveals his incompetency for educational direction. Modern civilization is rapidly tending to uniformity and unity. Each nation is hastening more and more to adopt the inventions and improvements of all the others.

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[1] Michel Bréal, member of the "Institut," in the Dictionnaire de pédagogie.

The educational element of civilization forms no exception to this general drift of things. Methods of teaching have nothing to do with national boundaries. The best is the best everywhere. The essential elements of a good school system are the same in every country. There is only one best way of securing and retaining efficient teachers. A model primary school in Paris, with its appurtenances, apparatus, fittings, and program, would be no less a model primary school in Washington. If Germany has worked out the model school room, all nations must copy it. If America devises the best school desk, it must go to the ends of the civilized world. Prussia institutes the normal school; every other nation adopts it. The really good local thing, the outgrowth of educational laws, that stands the test of experiment, in time becomes general. In the mean time innumerable whims, fancies, and strange vagaries claim attention for a longer or shorter period, then disappear, leaving no beneficial trace; hence, reference to foreign examples becomes indispensable to our purpose.

Urban and rural schools are not and cannot be, and perhaps need not be, the same in all respects. In the large city and the small village or rural district the conditions of life in general and of school life in particular are not the same; that which is easy in the one is difficult in the other; certain results which suffice in the one, suffice not in the other. The rural district, more favorable in some respects, in others is less favorable than the city, and in some cases the figures in the statistical exhibits of city and rural systems are not easily harmonized. In the country there is a high degree of equality in the social condition of the inhabitants. In the city we find the extremes of wealth and poverty: in one quarter we find tenement houses crowded with human beings whose earnings afford only the means of a bare subsistence, while another quarter is composed of princely dwellings filled with every luxury that wealth can buy. In the city the financial resources easily afford the means of supporting schools the year round, while the sessions of rural schools will perhaps scarcely average six months. The pupils in the city are almost universally destined to industrial or commercial pursuits, while in the country they are destined to the cultivation of the soil. In the country the pupils acquire, during the school period, habits of industry and labor; in the city they have little opportunity to become accustomed to manual labor. In the city organization specialization is the characteristic most prominent; in that of the rural district, on the other hand, the principal characteristic is the absence of specialization. The city system has different grades of schools; the rural has not. The former assigns to each teacher pupils of nearly the same age and advancement and, to a certain extent, those only of one sex; the latter requires the teacher to govern and instruct pupils of all ages and both sexes. The cities draw to themselves the highest grade of teaching talent, and over the work of these teachers superintendents exercise a far more effective supervision than is enjoyed by country schools. These and other points of difference between the conditions incident to city and country schools make the administration of the former a different thing from that of the latter; hence it is evident that an advantage may be gained by a separate treatment of the characteristics and problems of city systems as herein proposed.

The reporter wishes it to be distinctly understood *that he does not here attempt to present a complete statement of the organization, workings, or results of the city systems.* The scope of the report is much more restricted, its aim being limited mainly to the consideration of peculiar excellences and defects which are local, for the most part, or sectional, with a view to the promoting of the generalization of the former and the elimination of the latter.

THE IMPORTANCE OF THE SUBJECT.

In order to appreciate the extent and importance of our city systems of public instruction, it is necessary to consider the magnitude and growth, both absolute and relative, of the urban population of the country. The information for this purpose is contained in the following summary, taken from the Compendium of the Tenth Census:

Date.	Population of United States.	No. of cities.	Population of cities.	Inhabitants of cities in each 100 of the total population.
1790	3, 929, 214	6	131, 472	3. 3
1800	5, 308, 483	6	210, 873	3. 9
1810	7, 239, 881	11	356, 920	4. 9
1820	9, 633, 822	13	475, 135	4. 9
1830	12, 866, 020	26	864, 509	6. 7
1840	17, 069, 453	44	1, 453, 994	8. 5
1850	23, 191, 876	85	2, 897, 586	12. 5
1860	31, 443, 321	141	5, 072, 256	16. 1
1870	38, 558, 371	226	8, 071, 875	20. 9
1880	50, 155, 783	286	11, 318, 547	22. 5

By "cities" is here meant municipalities, whether with town or city organization, containing a population of 8,000 and upwards. Of these cities, we find that there was in 1880 the enormous number of 286, containing an aggregate population of 11,318,547, or 22½ per cent. of the entire population of the country; and it is safe to say that at the present moment the ratio of the urban to the whole population has reached twenty-five to one hundred, or one to four. But the fact of growth, both absolute and relative, is, if possible, still more striking. If we go back only fifty years, we find that there were only twenty-six cities, or less than one-tenth of the present number; and that these cities contained only 864,509 inhabitants, or little more than one-thirteenth of the present urban population. Such has been the growth of our cities. But this growth appears even more remarkable when viewed in relation to the growth of the whole population. Fifty years ago the urban population was about one-sixteenth of the entire population; now, as already stated, it is not less than one to four, the ratio having increased fully fourfold.

The application of science to productive industry and the use of steam as a motor have made this astonishing growth of urban population possible. By the continued operation of these agencies, the proportion of city population will no doubt be still more largely increased in the future. This enormous increase of cities is likely to continue indefinitely. Science cannot predict its limits.

Statistics are not available to exhibit with completeness the growth and actual development of the provisions and results of the public school systems of our cities; but the full and comprehensive statistics of city systems published in the reports of the United States Commissioner of Education, as furnished voluntarily by school officials, afford sufficient data for a tolerably accurate estimate of the colossal proportions of this educational agency. This statistical exhibit comprises 263 cities and towns containing a population of 7,500 and upwards, of which the total number is 310.

The total annual expenditure for school purposes in 259 of these cities (the number reporting this item) amounted in 1882 to the sum of $27,894,427.

The total *legal* school population in the 239 cities that reported this item amounted to 2,859,287, the actual school population (that is, the number of children of the usual age of school attendance, estimated to be 23 per cent. of the total population, the basis of estimation adopted by the Commissioner) being 2,079,188.

The estimated real value of property used for school purposes in the 240 cities reporting this item amounted to $94,294,153.

The total enrolment in 263 cities amounted to 1,821,773.

The average daily attendance in 253 cities, the number reporting this item, was 1,204,763.

Moreover, in estimating the importance of our city systems of schools, it is necessary to remember that the influence of cities in determining the general welfare is out of all proportion beyond the numbers of their population. They are the centres of wealth, culture, science, business enterprise, and social and political influence. The role of cities is, no doubt, to become in the future far more important, relatively, than it is now. Hence, it is in our cities that all the power of education is needed.[1] The future of our cities will be largely what education makes it and the future of our country will be largely what the cities make it. What but education is to settle the question how far self government is to be practicable in our populous cities? And in this connection it must not be forgotten that the schooling of the vast majority of the youthful portion of our urban population is afforded by the city systems of public instruction.

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[1] C'est dans le gouvernement républicain que l'on a besoin de toute la puissance de l'éducation.—MONTESQUIEU.

STATISTICAL SUMMARY OF THE NUMBER AND POPULATION OF CITIES.

Table showing the number of towns and cities containing a population of 4,000, 7,500, 8,000 *and upwards, respectively, in each of the States and Territories.*

States and Territories.	4,000 and upwards.	7,500 and upwards.	8,000 and upwards.	States and Territories.	4,000 and upwards.	7,500 and upwards.	8,000 and upwards.
Alabama	4	3	2	Nevada	4	1	1
Arkansas	1	1	1	New Hampshire	9	5	5
California	10	6	6	New Jersey	28	13	12
Colorado	4	2	2	New York	59	34	34
Connecticut	33	14	13	North Carolina	4	2	2
Delaware	1	1	1	Ohio	46	22	20
Florida	3	2	1	Oregon	1	1	1
Georgia	6	5	5	Pennsylvania	56	29	28
Illinois	37	22	18	Rhode Island	16	6	6
Indiana	27	12	11	South Carolina	3	2	2
Iowa	19	10	10	Tennessee	5	4	4
Kansas	10	4	4	Texas	11	5	5
Kentucky	11	5	5	Vermont	7	2	2
Louisiana	3	2	2	Virginia	11	7	6
Maine	19	8	6	West Virginia	4	1	1
Maryland	5	3	3	Wisconsin	20	10	9
Massachusetts	85	39	37	Arizona	1	....	....
Michigan	26	12	11	New Mexico	1	....	....
Minnesota	8	4	4	Utah	2	1	1
Mississippi	4	1	1	District of Columbia	2	2	2
Missouri	14	5	5	Total	624	310	291
Nebraska	4	2	2				

Alphabetical list of cities and towns of the United States containing a population of 7,500 *and upwards, divided into five classes, according to population.*

[Cities of the first class: Population, 200,000 and upwards.]

Baltimore, Md	332,313	Cincinnati, Ohio	255,139	Philadelphia, Pa	847,170
Boston, Mass	362,839	New Orleans, La	216,090	San Francisco, Cal	233,959
Brooklyn, N. Y	566,663	New York, N. Y	1,206,299	St. Louis, Mo	350,518
Chicago, Ill	503,185				

[Cities of the second class: Population, 100,000 to 200,000.]

Buffalo, N. Y	155,134	Louisville, Ky	123,758	Pittsburgh, Pa	156,389
Cleveland, Ohio	160,146	Milwaukee, Wis	115,587	Providence, R. I	104,857
Detroit, Mich	116,340	Newark, N. J	136,508	Washington, D. C	147,293
Jersey City, N. J	120,722				

Alphabetical list of cities and towns of the United States containing a population of 7,500 *and upwards, divided into five classes, according to population*—Continued.

[Cities of the third class: Population, 50,000 to 100,000.]

Albany, N. Y	90, 758	Kansas City, Mo	55, 785	Rochester, N. Y	89, 366
Allegheny, Pa	78, 682	Lowell, Mass	59, 475	Syracuse, N. Y	51, 792
Cambridge, Mass	52, 669	New Haven, Conn	62, 882	Toledo, Ohio	50, 137
Columbus, Ohio	51, 647	Paterson, N. J	51, 031	Troy, N. Y	56, 747
Indianapolis, Ind	75, 056	Richmond, Va	63, 600	Worcester, Mass	58, 291

[Cities of the fourth class: Population, 25,000 to 50,000.]

Atlanta, Ga	37, 409	Hartford, Conn	42, 015	Portland, Me	33, 810
Bridgeport, Conn	27, 643	Hoboken, N. J	30, 999	Quincy, Ill	27, 268
Camden, N. J	41, 659	Lancaster, Pa	25, 769	Reading, Pa	43, 278
Charleston, S. C	49, 984	Lawrence, Mass	39, 151	Salem, Mass	27, 563
Covington, Ky	29, 720	Lynn, Mass	38, 274	Savannah, Ga	30, 709
Dayton, Ohio	38, 678	Manchester, N. H	32, 630	Scranton, Pa	45, 850
Denver, Colo	35, 629	Memphis, Tenn	33, 592	Springfield, Mass	33, 340
Elizabeth, N. J	28, 229	Minneapolis, Minn	46, 887	St. Joseph, Mo	32, 431
Erie, Pa	27, 737	Mobile, Ala	29, 132	St. Paul, Minn	41, 473
Evansville, Ind	29, 280	Nashville, Tenn	43, 350	Terre Haute, Ind	26, 042
Fall River, Mass	48, 961	New Bedford, Mass	26, 845	Trenton, N. J	29, 910
Fort Wayne, Ind	26, 880	Oakland, Cal	34, 555	Utica, N. Y	33, 914
Grand Rapids, Mich	32, 016	Omaha, Nebr	30, 518	Wheeling, W. Va	30, 737
Harrisburg, Pa	30, 762	Peoria, Ill	29, 259		

[Cities of the fifth class: Population, 7,500 to 25,000.]

Adrian, Mich	7, 849	Bradford, Pa	9, 197	Danville, Pa	8, 346
Akron, Ohio	16, 152	Bridgeton, N. J	8, 722	Davenport, Iowa	21, 831
Alexandria, Va	13, 659	Brockton, Mass	13, 608	Decatur, Ill	9, 547
Allentown, Pa	18, 063	Brookline, Mass	8, 057	Derby, Conn	11, 650
Alton, Ill	8, 975	Burlington, Iowa	19, 450	Des Moines, Iowa	22, 408
Altoona, Pa	19, 710	Burlington, Vt	11, 365	Dover, N. H	11, 687
Amsterdam, N. Y	9, 466	Cairo, Ill	9, 011	Dubuque, Iowa	22, 254
Ann Arbor, Mich	8, 061	Canton, Ohio	12, 258	Easton, Pa	11, 924
Appleton, Wis	8, 005	Carbondale, Pa	7, 714	East Saginaw, Mich	19, 016
Atchison, Kans	15, 105	Cedar Rapids, Iowa	10, 104	East St. Louis, Ill	9, 185
Attleboro', Mass	11, 111	Chattanooga, Tenn	12, 892	Eau Claire, Wis	10, 119
Auburn, Me	9, 555	Chelsea, Mass	21, 782	Edgewater, N. J	8, 044
Auburn, N. Y	21, 924	Chester, Pa	14, 997	Elgin, Ill	8, 787
Augusta, Ga	21, 891	Chicopee, Mass	11, 286	Elmira, N. Y	20, 541
Augusta, Me	8, 665	Chillicothe, Ohio	10, 938	Fitchburg, Mass	12, 429
Aurora, Ill	11, 873	Clinton, Iowa	9, 042	Flint, Mich	8, 409
Austin, Tex	11, 013	Clinton, Mass	8, 029	Fond du Lac, Wis	13, 094
Bangor, Me	16, 856	Columbia, Pa	8, 312	Frederick, Md	8, 659
Bath, Me	7, 874	Columbia, S. C	10, 636	Fremont, Ohio	8, 446
Bay City, Mich	20, 693	Columbus, Ga	10, 123	Freeport, Ill	8, 516
Bayonne, N. J	9, 372	Cohoes, N. Y	19, 416	Galesburg, Ill	11, 437
Bellaire, Ohio	8, 025	Concord, N. H	13, 843	Galveston, Tex	22, 248
Belleville, Ill	10, 683	Council Bluffs, Iowa	18, 063	Georgetown, D. C	12, 578
Beverly, Mass	8, 456	Cumberland, Md	10, 693	Gloucester, Mass	19, 329
Biddeford, Me	12, 651	Dallas, Tex	10, 358	Greenwich, Conn	7, 892
Binghamton, N. Y	17, 317	Danbury, Conn	11, 666	Hamilton, Ohio	12, 122
Bloomington, Ill	17, 180	Danville, Ill	7, 733	Hannibal, Mo	11, 074

Alphabetical list of cities and towns of the United States containing a population of 7,500 and upwards, divided into five classes, according to population — Continued.

[Cities of the fifth class: Population, 7,500 to 25,000—Continued.]

Haverhill, Mass	18, 742	Moline, Ill	7, 800	Rockland, Me	7, 599
Holyoke, Mass	21, 915	Millville, N. J	7, 660	Rome, N. Y	12, 194
Hornellsville, N. Y	8, 195	Muscatine, Iowa	8, 295	Rutland, Vt	12, 149
Houston, Tex	16, 513	Montgomery, Ala	16, 713	Sacramento, Cal	21, 420
Hudson, N. Y	8, 670	Muskegon, Mich	11, 262	Saginaw, Mich	10, 525
Ironton, Ohio	8, 857	Nashua, N. H	13, 397	Salt Lake City, Utah	20, 768
Ithaca, N. Y	9, 105	Natick, Mass	8, 479	Sandusky, Ohio	15, 838
Jackson, Mich	16, 105	Newark, Ohio	9, 600	San Antonio, Tex	20, 550
Jacksonville, Fla	7, 650	New Albany, Ind	16, 423	San José, Cal	12, 567
Jacksonville, Ill	10, 927	New Brighton, N. Y	12, 679	Schenectady, N. Y	13, 655
Jamestown, N. Y	9, 357	New Britain, Conn	11, 800	Saratoga Springs, N. Y	8, 421
Janesville, Wis	9, 018	New Brunswick, N. J	17, 166	Sedalia, Mo	9, 561
Jeffersonville, Ind	9, 357	Newburgh, N. Y	18, 049	Selma, Ala	7, 529
Johnstown, Pa	8, 380	Newburyport, Mass	13, 538	Shamokin, Pa	8, 184
Joliet, Ill	11, 657	New Castle, Pa	8, 418	Shenandoah, Pa	10, 147
Keokuk, Iowa	12, 117	New London, Conn	10, 537	Shreveport, La	8, 009
Kingston, N. Y	18, 344	Newport, Ky	20, 433	Somerville, Mass	24, 933
Key West, Fla	9, 890	Newport, R. I	15, 693	South Bend, Ind	13, 280
Knoxville, Tenn	9, 693	Newton, Mass	16, 995	Springfield, Ill	19, 743
La Crosse, Wis	14, 505	Norfolk, Va	21, 966	Springfield, Ohio	20, 730
La Fayette, Ind	14, 860	Norristown, Pa	13, 063	Stamford, Conn	11, 297
Lansing, Mich	8, 319	North Adams, Mass	10, 191	Steubenville, Ohio	12, 093
La Salle, Ill	7, 847	Northampton, Mass	12, 172	Stillwater, Minn	9, 055
Lawrence, Kans	8, 510	Norwalk, Conn	13, 956	Stockton, Cal	10, 282
Leadville, Colo	14, 820	Norwich, Conn	15, 112	Taunton, Mass	21, 213
Leavenworth, Kans	16, 546	Ogdensburg, N. Y	10, 341	Tiffin, Ohio	7, 879
Lebanon, Pa	8, 778	Orange, N. J	13, 207	Titusville, Pa	9, 046
Lexington, Ky	16, 656	Oshkosh, Wis	15, 748	Topeka, Kans	15, 452
Lima, Ohio	7, 567	Oswego, N. Y	21, 116	Vicksburg, Miss	11, 814
Lewiston, Me	19, 083	Ottawa, Ill	7, 834	Vincennes, Ind	7, 680
Lincoln, Nebr	13, 003	Ottumwa, Iowa	9, 004	Virginia City, Nev	10, 917
Lincoln, R. I	13, 765	Paducah, Ky	8, 036	Waltham, Mass	11, 712
Little Rock, Ark	13, 138	Pawtucket, R. I	19, 030	Warwick, R. I	12, 164
Lockport, N. Y	13, 522	Petersburg, Va	21, 656	Waterbury, Conn	17, 806
Logansport, Ind	11, 198	Pittsfield, Mass	13, 364	Watertown, N. Y	10, 697
Long Island City, N. Y	17, 129	Plainfield, N. J	8, 125	Watertown, Wis	7, 883
Los Angeles, Cal	11, 183	Port Huron, Mich	8, 883	Westfield, Mass	7, 587
Lynchburg, Va	15, 959	Port Jervis, N. Y	8, 678	West Troy, N. Y	8, 820
Macon, Ga	12, 749	Portland, Oreg	17, 577	Weymouth, Mass	10, 570
Madison, Ind	8, 945	Portsmouth, N. H	9, 690	Wilkes-Barre, Pa	23, 339
Madison, Wis	10, 324	Portsmouth, Ohio	11, 321	Williamsport, Pa	18, 934
Malden, Mass	12, 017	Portsmouth, Va	11, 390	Wilmington, N. C	17, 350
Mansfield, Ohio	9, 859	Pottsville, Pa	13, 253	Winona, Minn	10, 208
Marlboro', Mass	10, 127	Poughkeepsie, N. Y	20, 207	Woburn, Mass	10, 931
McKeesport, Pa	8, 212	Quincy, Mass	10, 570	Windham, Conn	8, 264
Meadville, Pa	8, 860	Racine, Wis	16, 031	Woonsocket, R. I	16, 050
Medford, Mass	7, 573	Raleigh, N. C	9, 265	Yonkers, N. Y	18, 892
Meriden, Conn	15, 540	Richmond, Ind	12, 742	York, Pa	13, 940
Milford, Mass	9, 310	Rockford, Ill	13, 129	Youngstown, Ohio	15, 435
Middletown, N. Y	8, 494	Rock Island, Ill	11, 659	Zanesville, Ohio	18, 113

ADMINISTRATION.

The schools of cities are controlled and managed by local boards, variously designated in different sections of the country as school committees, school visitors, school directors, school trustees, school commissioners, and school boards. These boards differ not only in name, but they differ very considerably in respect to number, mode of election, tenure of office, powers, and duties, but for the most part they directly represent the opinions and will of the people themselves in reference to the maintenance and condition of their schools. The American school system is largely founded on the idea of local competency in the management of educational affairs; hence the most important factor in the success of city systems is found in the character of the school boards; and there is no one problem connected with the economy of these systems so important and so difficult of solution as that of securing competent school boards. In Prussia they say, "As is the teacher, so is the school;" in Holland they say, "As your inspection is, so is your school;" with us it would be more fundamentally true to say, "As is your school board, so are your schools." Nobody denies that the men chosen to serve on a city school board ought to be the foremost citizens in respect to intelligence, integrity of character, public spirit, sound judgment, and social standing. In practice it has been found extremely difficult to reach this standard. The school boards are probably few and far between among whose members there are not some persons unqualified for a trust of such importance. This office is not unfrequently used by young politicians and old politicians of the inferior order as a stepping-stone to coveted political places. In too many instances it is sought for by patientless doctors and clientless lawyers as a means of professional advertising. It is too often traded off by politicians, for assistance in running the political machine, to incompetent persons, who are gratified by the local notoriety which it affords. And yet, on the whole, great credit must be accorded to our city school boards; the great and undisputed success of the city systems, generally speaking, is the measure of their merit. The worthy and the competent have far outnumbered the unworthy and incompetent. The roll of every school board bears the names of members who deserve the lasting gratitude of their fellow citizens for their faithful, self sacrificing, judicious, and persevering labors in behalf of the public school interest.

The city boards of education differ very considerably in respect to the number of members of which they are composed, this number ranging between the extremes of three and fifty and, in many instances, being not at all proportioned to the population of the city to which it belongs. The Boston board, previously to its reorganization in 1876, was carried up, in consequence of the annexation of adjacent municipalities, to the unwieldy number of 116. Pittsburgh, with a population of about one-ninth of that of New York, has a board more than 50 per cent. larger;

Louisville, with a population less than a third of that of St. Louis, has a board of equal size. The Denver board consists of only six members.

The boards differ not only in the proportion of members, but also in respect to mode of election and tenure of office. The boards are constituted by provision of the State laws; in some States there is a general provision therefor; in others city boards are constituted by provision contained in the city charters. In a few cases special provision is made to meet the peculiar wants of particular cities. In general the members are elected by popular vote to represent subdivisions or wards of cities and to hold office for two or three years, one-half or one-third of the members being elected each year.

The aim of the most intelligent friends of our schools has been to separate their administration as far as practicable from the influence of party politics. In this direction, however, much remains to be desired. Everywhere there are unscrupulous politicians who do not hesitate to improve every opportunity to sacrifice the interests of the schools to the purposes of the political machine. Here is found the source of the most general, as well as the most serious, evil of our city systems. Long ago this evil became so grievous in some of our largest cities that the election of school boards by popular vote had to be abandoned. In New York it was replaced by appointment by the mayor; in Philadelphia, by appointment by judges of a superior court; in Chicago, by election by the city council. In other cities various expedients have been resorted to as safeguards against the "harmful influence of ward politicians" in the administration of school affairs: in Pittsburgh, for example, the members of the central school board are elected by the local school boards; in Boston for a number of years past the members have been elected on a general ticket. Perhaps there is no city whose school board is constituted in a more objectionable manner than that of the city of Buffalo, which is merely a special committee of the city council, holding office for one year only. On the other hand/it is safe to say that no city has ever come nearer to the realization of the ideal school board than has the city of Denver. The members of this board have been, from its origin, so far as I was able to ascertain by inquiry on the ground, unexceptionable in respect to character, ability, and faithful devotion to the interests of the schools. The choice has been made at a special election for this purpose alone, without any connection whatever with municipal or State elections. / I am far from concluding, however, that this happy result is attributable solely to the mode of election; it is due to a peculiar concurrence of circumstances in connection with the mode of election; and the long continuation of similar results is too much to expect. In a few States women have been made eligible to school boards, not, however, as yet with any marked results; and in several States women have been granted the privilege of school suffrage, as a means of counteracting political and other corrupting influences in the election of school boards; but as yet women have shown but little disposition to avail themselves of this franchise.[1] Thus it appears that the two directly opposite expedients of extending the suffrage to women on the one hand and on the other of suppressing even male suffrage have been adopted as means of securing more competent school boards; but it must be admitted that the problem remains unsolved; and without doubt this is the supreme educational problem which remains for our educational statesmanship to grapple with.

In a few cities there are local school boards sharing the responsibility of school management with the general board, notably New York, Philadelphia, and Pittsburgh. In the last two they are elected by the people; in the first this mode of election has been replaced with great advantage by election by the general board. Experience has proved that independent local boards are not only undesirable, but highly objectionable. But local managing boards, wholly dependent on the general board, both in respect to appointment and functions, as in the London system, seem to be not only desirable but quite necessary in the administration of large city systems. In Philadelphia the administration affords a remarkable example of decentralization, there being no less than thirty-one local boards, comprising from ten to twenty members each. Paris, on the other hand, presents a striking example of centralization, the vast and efficient school system of that city being administered by a single director, without the interference or support of any school board whatever.

The primary school board of Boston (appointed by the grammar school board), which was abolished thirty years ago, consisted of about two hundred members, the idea being to make the number equal to the number of teachers under its charge.

The following table shows (1) the population of a few representative cities, (2) the number of members in each school board in those cities, (3) the terms of service, (4) the representation, and (5) the mode of choice.

Cities.	Population.	No. of members.	Term of service.	Representation.	How chosen.
New York	1,206,290	21	3 years	At large	Mayor.
Chicago	503,185	15	2 years	At large	People.
Boston	362,839	25	3 years	At large	People.
St. Louis	350,518	26	2 years	Ward, 2	People.
Cincinnati	255,139	50	3 years	Ward, 2	People.
Cleveland	160,146	18	2 years	Ward, 1	People.
Pittsburgh	156,389	33	3 years	Ward, 1	School directors.
Buffalo	155,134		1 year	At large	President city council.
Louisville	123,758	26	2 years	Ward, 2	People.
Worcester	58,291	25	3 years	At large	People.

Organization.—In Massachusetts cities the mayors are ex officio presidents of the school boards, but in general school boards elect their presiding officers from their own members. There are two prevailing types of organization for the performance of administrative duties, of which St. Louis and Cincinnati may be taken as examples. The St. Louis board has only *twelve* standing committees, which are as follows: (1) On teachers; (2) on lands and claims; (3) on leasing; (4) on building; (5) on course of study, text books, and apparatus; (6) on auditing; (7) publications and supplies; (8) on the library; (9) on janitors; (10) on ways and means; (11) on salaries; and (12) on rules and regulations. Of these committees, only three (1, 5, and 12) have direct reference to matters relating to instruction and discipline, the other nine being business committees. *There are no committees whatever on school districts or schools,* although the committee on teachers acts as standing committee on the normal school and is required to visit and perform some other duties in respect to the high school.

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[1] In 1883 in the State of New Hampshire, where women have been granted the school franchise, less than a hundred women, it is said, voted for school officers.

The Cincinnati board of education, on the other hand, has *twenty-five* standing committees,[1] designated as follows: Boundaries, buildings and repairs, claims, course of study and text books, discipline, drawing, examinations, fuel, funds and taxes, furniture, German department, gymnastics, law, lots, music, night schools, normal school and teachers' institute, penmanship, printing, reports and excuses, rules and regulations, salaries, stoves and furnaces, supplies; and ungraded schools. In addition to this formidable array of standing committees, there are thirty-four subcommittees on districts and schools.

Nor does this complete the list. The "union board," composed in part of members of the board of education, which has charge of the high schools, employs in the performance of its functions no less than fifteen committees, so that the management of the whole system of schools is shared by *seventy-four* committees. The organization of the Chicago board belongs to this type, the whole number of its committees being *seventy-nine.*

Cleveland, on the other hand, follows the example of St. Louis in dispensing with district committees altogether and in judiciously limiting the number of standing committees. The old organization of the Boston board, in complication and decentralization, belonged to the Cincinnati type; while the new organization, in simplicity and centralization, and consequent efficiency and absence of friction, approaches much more nearly that of St. Louis. The St. Louis type of organization is, no doubt, much better than that of Cincinnati.

Powers and duties.—For the most part school boards are invested with authority to manage whatever relates to instruction within the limits prescribed by law and to control the expenditure of the funds legally provided therefor. They have the power to certificate, elect, and dismiss teachers and fix their compensation; they determine the grading and courses of study of the [illegible] ibe the text books to be used. They make the regulatio [illegible] ion of pupils to the different grades of schools, for pr [illegible] fr[illegible] one class to another, and for graduation, but are not empowered either to establish schools or to provide for instruction not authorized by law, neither have they the custody and disbursement of the school moneys.

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[1] Previous to the recent reorganization, by which the number of members is reduced to 37 and the standing committees to 18.

There are, however, important cities where the powers are much more restricted; for example, Philadelphia, Pittsburgh, and Hartford. In the former two the central boards share the powers and responsibilities of school management with local boards, having exclusive control only of the high schools.[1] They have, however, control of three vital elements of school economy, namely, (1) that of determining the number of teachers to be employed, (2) of fixing their salaries (within the limits of the appropriations), and (3) of prescribing the text books and the courses of study. In Hartford we have perhaps the extreme existing example of decentralized administration. In this city ultraconservatism has succeeded in retaining, until the present time, the antiquated district system, which has been so long disapproved by every intelligent school man; each district raises and expends its own school money, builds its own school-houses, and in fact has almost absolute control over its school matters within the limits of the State law, leaving to the central board little authority except the control of the high school. Under this system, while the wealthiest districts have had good schools maintained on a liberal scale, the poorer districts have not fared so well; in some parts of the municipality the schools are hardly adequate to the preparation of pupils for admission to the high school. The district system is essentially antagonistic to the great principle which should control school legislation and school administration, namely, equality of burdens and equality of privileges.

In contrast to these examples of decentralized power there are some cities where a single moderate sized board exercises almost absolute authority in the management of school affairs. Of this number New York and St. Louis are the most prominent. In New York the board has almost unlimited authority in all matters relating to school property, not being dependent on any municipal body either for the purchase of sites or the erection of school-houses. The St. Louis board has still larger powers, and that city is one of the few municipalities where the school boards are intrusted with the disbursement of school moneys. All boards, with perhaps the exception mentioned below, are probably alike in one particular, namely, in being limited by law, or by the action of some other city authority, as to the amount of money they may expend for school purposes. The school boards of Massachusetts, though invested with less power in some respects than those in some other sections, possess one power which is peculiar and highly important: they have the right to determine absolutely the number, the grade, and rates of salaries of teachers, without regard to the amount appro-

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[1] In Pittsburgh of the colored schools also.

priated for this purpose by municipal authorities. On the other hand, the municipal authorities have the power to stop school expenses and close the schools at the end of six months in each year if they think the scale of expenditure is too high for the approval of the popular will. This balance of power, which has long been a feature of the school system, has worked most satisfactorily, giving to the board sufficiency of independence in the matter of expenditures and to the administrators of the public revenue the power to check any extravagance on the part of school boards. This wise, far-reaching, and fruitful provision is doubtless one of the very best features of the system. The result has been a liberal support of the schools, while the tendency to extravagance on the part of school boards and the tendency to parsimony on the part of city councils have been kept under wholesome restraint. As a matter of fact, the schools have in no case been actually suspended from lack of funds.

Another important power which is believed to be peculiar to the school boards of this State is that of providing school accommodations temporarily without regard to municipal appropriations therefor. The result of this power is that, as a rule, no children are deprived of schooling from lack of school accommodations.

School boards may be divided into three classes respecting their power in purchasing sites and building school-houses, namely: (1) the class exercising all the power in purchasing sites and building school-houses, (2) the class which divides this power with the city council, (3) the class which has no authority whatever in providing school accommodations. St. Louis affords an example of the first class; Chicago and Boston, of the second class; Philadelphia and Hartford, of the third. In Chicago the sites are purchased by the city council; the rest is done by the school board. In Boston until 1875 the school board had no authority in determining the location or character of the school-houses; since that date they have had the veto power, both in respect to location and plans, and this division of power has thus far proved very satisfactory. Had this veto power been given twenty years earlier the four story school-houses in that city would have been fewer.

The history of city systems of schools makes it evident that in the matter of administration the tendency is towards a greater centralization and permanency of authority and that this tendency is in the direction of progress and improvement.[1] No doubt excessive decentralization of administration has been one of the chief obstacles to improvement in every department of our free school system.[2]

ORGANIZATION OF INSTRUCTION.

The characteristic fact in the pedagogical organization of our city schools is the division of the schools into three grades: the high, grammar, and primary. The demarcation between the primary and grammar divisions has no foundation in the nature of things. The grammar and primary courses of study taken together constitute the elementary course and should be considered as a whole. On the other hand, the elementary and high schools constitute two distinct categories of instruction. The high school belongs to secondary instruction, or the first stage of liberal education. Elementary education is that which is deemed essential for every citizen, whatever may be his destination, and hence it is that which is generally considered as obligatory. The high school, on the other hand, while it is desirable that it should be open to all, is not expected to give instruction to the masses of pupils. In theory there is a very considerable approximation to uniformity in respect to the upper limit of the elementary course, or, what amounts to the same thing, in respect to the line of demarcation between the grammar and high school courses. In general it is intended so to frame the elementary course, as to its stages and the amount of work to be done, that the average pupil may complete it at the age of fourteen, provided the system of instruction is conducted with sound judgment and efficiency. While there is a general uniformity as to the upper limit of the elementary course and the lower limit of the high school course, there is a very considerable diversity as to the upper limit of high school instruction, both in respect to the studies prescribed and the period at which they are supposed to be completed, as is more specifically set forth under the head "High schools." While the lower limit of elementary education is, of course, substantially uniform in respect to the substance of the matters taught, in respect to the age it is not so, the lower limit as to age being six in a large proportion of the cities, while perhaps in a nearly equally large proportion it is five.

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[1] A student of this subject would also do well to note the experiences in Ohio and other States along the line of application of the so-called Akron school law for the organization of city boards of education.

[2] For the writer's observations on "Supervision" see pages 52-59.

In the city of St. Louis the whole course of public instruction is divided into three periods of four years each, the primary, grammar, and high school courses comprising four years each; so that the pupil entering the primary school at the age of six, by regular promotions, will have graduated at the high school at the age of eighteen. The courses of these three grades are subdivided, respectively, into four divisions, each intended to be completed in one year's time. The plan of organization of which this is the type has been quite largely adopted in western cities./ In Cincinnati we find a somewhat different type of organization. Although the age at which pupils begin and the time required to complete the whole course (12 years) are the same as in St. Louis, the elementary course is differently divided. The schools of the lowest grade are called district schools, with a course of instruction comprising five years. The schools embraced in the upper grade of the elementary course are called intermediate schools, with a curriculum designed to be completed in three years. This type of organization is found to some extent in other cities in Ohio, and, perhaps, in some other neighboring States.

In the Middle and Eastern States we find organizations differing somewhat, not only from those described, but also from each other. In New England cities very generally the primary course comprises three years, for pupils from five to eight years of age, while the grammar school course comprises six years. In Philadelphia and some other cities, there is a separate grade of schools between the primary and grammar, with a course of study comprising two or three years, called intermediate. In Richmond the primary course comprises four years, the grammar three, and the high three.

Besides this view of organization, which regards the scope of instruction, the division into grades, and the subdivision into classes, there is another view relating to the disposition and grouping of the grades and classes into schools for the purpose of direction and management by principals. In most cities the high school grade constitutes a separate establishment, while there is much diversity in the grouping into schools of the classes of the elementary grades. In the Western States, most commonly elementary schools comprise both the primary and grammar grades under the same principal and are housed in the same building. In the Middle and Eastern States, on the other hand, primary and grammar grades of pupils are generally instructed in separate schools, the schools of either grade having their own principals. In New York the primary schools are very large establishments, some schools containing as many as fifteen hundred pupils. In Boston, on the other hand, the primary schools are intended to be establishments of moderate size, the maximum primary building erected in recent years containing not more than eight school rooms. The average number of teachers to a primary school building in 1876 was a little less than six. From one to three or four of these neighborhood primary schools are grouped around each grammar school, in locations best adapted to accommodate the pupils, the master of the grammar school exercising the function of principal of these schools. This mode of organization possesses peculiar advantages.

In most cities the territory is divided into districts corresponding to the organization of the schools; that is, each school or group of schools under the same principal has its own district, pupils being required to attend the school within the district where they reside.

Where this arrangement exists, a pupil can have no choice of schools; he must attend the one in the district where he resides. Hence there can be no competition between the schools in respect to the number or character of the pupils admitted. Of course, such district limits must be established and rigidly maintained where the salaries of principals depend on the number of pupils or grades of the classes under their direction. It is evident that this district system renders a perfect uniformity of text books necessary, no less than uniformity in the course of study. Otherwise the pupils in removing from one district to another could neither find their classes nor use their text books. New York is the most notable exception to this rule. In this city, while each ward constitutes a district with reference to the management of the schools by the local board of trustees of the ward, the attendance of the pupils is not restricted to any particular school or schools. This liberty in respect to attendance is rendered necessary by the want of uniformity of text books, which without this liberty would make it necessary for the pupils to change their text books whenever they changed their residence; and then the absence of district limits enables certain principals, with the concurrence of the local committees, to build up schools of a peculiar character, as there is nothing to hinder them from drawing their pupils from any part of the city. Hence the schools of New York, especially the grammar schools, have come to have a more marked individuality than those of other cities. One school, for instance, gets a reputation for fitting its pupils for the high school, while others become noted for fitting their pupils for practical business.

HIGH SCHOOLS.

The origin of our modern high school is coeval with the elementary public school. By the first school law of the colony of Massachusetts Bay, enacted in 1647, every town containing one hundred families or householders was required to "set up a grammar school," whose master should be "able to instruct youth so far as they may be fitted for the university." The establishment of the existing Latin grammar schools in Boston and Roxbury antedates this law. The institution of the English high school in Boston, in 1821, providing for a course of instruction in the French language and the English branches of a high school education, was designed for boys not destined to the university, but requiring a higher and broader education than was afforded by the elementary school, to fit them for responsible positions in commercial and industrial pursuits. So popular was this measure of educational progress that it was adopted by the citizens in town meeting, assembled in Faneuil Hall, with substantial unanimity. Happily the originators of this scheme were bold enough and sagacious enough to demand for the object in view a thoroughly organized and equipped *separate* school, instead of contenting themselves with the addition of a modern department to the ancient classical school, although that institution was then flourishing under one of the ablest of its line of accomplished masters. Fortunately this school has been permitted to maintain its individuality without interruption for more than three score years, the distinctive American representative of the German Realschule. A few years later, 1826, a similar high school for girls was established. Thus the foundation of the American free high school system was laid; it was several years, however, before the high school began to be set up in the other parts of the Union.

The institution of the Central High School for Boys in Philadelphia, in 1837, on a more liberal scale than any which had preceded it, under the direction of a principal of eminent ability,[1] marks another era in the high school development. From this date the spread of the high school went on with increasing rapidity, and it is now probably recognized as an essential part of the public school system in nearly every city in the Union. In its development, however, it has not followed the original process. In a few of the largest and oldest cities, the beginning was made with a single boys' school, with classical and non-classical courses, separate girls' schools coming later; but in general (the demand for high school instruction for both sexes and of both kinds, classical and non-classical, being simultaneous and the means at the outset for providing it being limited) the beginning has been made with a single school mixed both as to sexes and courses. The first high school of this kind was established in 1831 at Lowell,[2] then a small manufacturing town only about nine years old; in the beginning it had but one course of study, and that was imperfectly defined, and its organization was in all respects similar to that of the mixed country academies then so prevalent in New England. A few years later, however, the single course was replaced by two distinct courses, classical and non-classical.

This is the prevailing type of our high schools. But the history of education does not justify the assumption that it is a finality. The law of progress, after enforcing specialization of courses *within* an institution, proceeds at the next step to the specialization of institutions. In a certain number of the smaller cities the course is mostly limited to what may be called an English course, comprising only the rudiments of the Latin language and something of French and German, without any Greek. From this rudimentary type we find, in going upward through the successive ranks of cities below the first class, the high schools become more comprehensive in scope and complex in organization, in some cases comprising the preparatory, non-classical or English, commercial, and normal courses. The grand high school at Pittsburgh, installed in its palatial edifice, is an example of the expansion of the mixed high school into these four departments. The first stage of progress consists in the process thus indicated of multiplying the special functions of a single institution. The next step is the specialization of the institutions themselves, thus simplifying their functions and increasing their efficiency. This specialization of high schools is seen in different stages of development in most of the cities of the first class and in some of those of the second. The first division is according to the sex of the pupils. In New York, Philadelphia, Louisville, San Francisco, New Orleans, and Charleston there is a high school for boys and a high school for girls. In New York, Philadelphia, and San Francisco, however, the high school for girls is a normal school as well. In Baltimore there are two high schools for girls and two for boys, counting as one the recently established manual training school. In New York, Baltimore, Louisville, and Philadelphia the high school for boys is carried up into the college grade, leading to the degree of bachelor. In St. Louis there is one high school, with local branches; in Cincinnati there are two and in Chicago three. These are all substantially of the same type, namely, mixed schools, with classical and non-classical courses.

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[1] A. D. Bache, LL.D., subsequently Director of the Coast Survey.

[2] Lowell high school was first opened with 47 pupils, boys and girls, in December, 1831, with Thomas M. Clark, now bishop of Rhode Island, for its teacher. He was then only nineteen years of age. He had an assistant, a Mr. Clapp. Originally, boys and girls sat in the same room, and from the first till now it fitted boys for college, and in it all the higher English studies were pursued. Originally it had but one course of study, poorly defined, and pupils staid in the school six or seven years; no regular limit as to time; and no diploma and no graduating exercises. Diplomas began to be awarded in 1858. There was no similar school of earlier date. Lowell is not an old city; it began to be about 1822. I first entered the school on Tuesday, July 15, 1845, and I left it in the summer of 1883. I served as principal thirty-eight years. Our course of study became fixed about 1858, when graduating exercises and the awarding of diplomas began.—(From a letter by Mr. C. C. Chase, April, 1884.)

We have seen that in Boston the foundation of the high school system was begun by a specialization of institutions instead of a specialization of courses within an institution. In harmony with this method a *separate classical* high school for girls was opened in 1878, although this plan was opposed by the friends of coeducation, who urged as a substitute the admission of girls to the Latin school for boys. In the mean time the first high school for girls above mentioned, having been set up in advance of public sentiment, had a short life, being abolished under the lead of a very eminent and public spirited citizen, who represented the aristocratic sentiment, which is always anxious to keep the education of the people within pretty narrow limits. A quarter of a century later the establishment of a city female normal school was immediately followed by the demand of the people for a girls' high school. This demand was met by the makeshift method of reorganizing the normal into a girls' high and normal school, the result being a good high school and a poor normal school. In time the specializing process took the poor, pinched normal department out of this double organization and organized it into a separate school, which soon became vigorous and efficient. We find here, also, another interesting illustration of the process of specialization in the development of the high school system by the annexation of adjacent municipalities. The Boston system was by this means increased by the addition of five high schools, mixed both as to sexes and courses; and, besides, the old endowed Roxbury Latin Grammar School, above alluded to, was opened to the inhabitants of the whole city as a free classical school for boys. The annexed mixed schools were allowed to remain mixed as to sex, but their courses were unified in conformity with that of the English high school, the elements of Latin however still being permitted in addition for the local convenience of beginners in the classical course, who must later go to the central Latin schools in order to complete the preparation for college. At the same time an advanced course of two years was added to the original course of three years in the central boys' English high school and in the corresponding school for girls, to which the graduates of the local high schools were admitted. And, finally, a new high school of the local type has been recently established to accommodate the inhabitants of an outlying district of the city.

The system as it now stands, then, exclusive of the free corporate school above referred to, consists of six local mixed schools of the lower order and the four central schools of the superior order, a classical and a non-classical one for each sex.

This central group of four high schools may be regarded as the normal type of high school organization. It is in harmony with the organization of secondary education in the most advanced educating countries, which educates the sexes in separate schools and provides separate classical and non-classical schools for boys, of which the representative types are the German Gymnasium and Realschule. Considerations of economy will prevent this specialization in the small cities. In the largest cities, as we have seen, the progress towards this specialization is already considerable, and the history of education justifies the prediction that it will continue to advance in proportion as the inhabitants comprehend what is best in education and demand it for their children.

The ancient and cultured city of Salem is the only city where a fair trial of the specialized and doubly mixed systems has been made. The former was tried first for many years; it was exchanged for the latter twenty-five years ago to save expense. The result has not been satisfactory, and a movement is now on foot for restoring the specialized system, which is said to meet with no serious opposition, except from the economical point of view.

But the specialization of the high school system in our large cities is not to stop here. We see already that Baltimore has incorporated into her system an institution for higher education, patterned after the corporate manual training high school at St. Louis.[1] It seems quite probable that high schools of this kind, with such modifications as experience may suggest, will be established in all the principal cities. Such a school will no doubt meet the wants of a certain class of pupils, but if adopted it should be in addition to the standard types of classical and non-classical high schools, and not as a substitute for either of them. And the reasons for establishing a supplementary high school of this kind for boys hold equally good for establishing a corresponding school with appropriate hand work for girls.

Nearly the whole of this vast system of city high schools, offering its instruction gratuitously to the whole urban population of the country, is the growth of a period scarcely exceeding a generation. Forty years ago there was not one public high school west of the Alleghanies and those of the Atlantic cities south of New England could have been counted on the fingers of one hand. It was scarcely thirty years ago that a few public spirited inhabitants of a small Connecticut city contributed upwards of $100,000 to found and endow a free academy, to be controlled by a close corporation and to serve the purpose of a high school. This voluntary scheme was undertaken because of the conviction of its originators, only so far back in the past, that the popular will could not be relied upon either for the support or administration of high schools. How erroneous this conviction was may be illustrated by citing the case of the high school in the capital of the same State. In this city a little before the time referred to, the building for the high school had been erected, costing, with the lot, a little upwards of $10,000, which was considered a very liberal, if not extravagant, expenditure for the purpose. Scarcely more than a dozen years had passed before the relative conditions of these schools were radically changed. The free academy found its resources inadequate; there was no advancement from the time of its institution; it was in want of additional instructors and apparatus which it had no means to provide.[1] On the other hand, the Hartford school, relying for its support on the annual appropriation from the municipal treasury, has been furnished with everything needful for its development and efficiency. It had been installed in a magnificent new edifice, which had cost, with its lot (the finest site in the city), a sum equal to nearly sixteen times the cost of the original edifice. This noble edifice, having been consumed by fire in 1882, has been replaced by a still grander building (November, 1884), costing, with its furnishings, library, apparatus, &c., $285,000, the cost of the lot in addition having been $30,000. This sum of money was appropriated by a vote of the citizens of the town of Hartford in town meeting, the town comprising the city and some territory outside of its limits.

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[1] See under the head "Industrial education."

The rapid growth of public sentiment in favor of the high school has not been confined to any one section of the country; it has been universal, east, west, north, and south. The high schools of Omaha and Denver are as completely organized and equipped as the high schools in cities of similar size in the Middle and Eastern States. There is no topic on which recent reports speak with more earnestness and decision than on the importance and success of the high schools. The assaults which have been made upon them in recent years by the opponents of liberal provision for public instruction appear to have been ineffectual. Everywhere they have maintained their ground; indeed, there has been no perceptible check in their growth and development. It is becoming more and more evident that the free public high schools are as highly prized by the people as are the elementary schools. They naturally find favor in a democratic community because they are the most truly democratic of all our institutions. An eminent French educator (M. F. Buisson) says: "So far as social equality can be attained here below, it is attained in the American high school. There all is done that can be done to push as far and as high as possible that common instruction which obliterates the distinction between the rich and the poor." Nothing is more common than to see pupils representing the extremes in the social scale sitting side by side in the high school classes. I have seen the son of a cultured and wealthy merchant and the son of a very poor immigrant going together from the same class in the grammar school to the same class in the high school, the former expending his pocket money to buy the requisite outfit of clothes and books for the latter. I have seen young ladies coming from families of the first rank, not only in respect to culture and wealth, but also in respect to ancestral pretensions, passing the three-year course in the girls' high school side by side with the daughter of the laborer and of the washerwoman. In a suburban town I have seen the daughter of a wealthy manufacturer procuring by subscription the funds to enable a classmate, the worthy son of a poor Irish farmer, to obtain the clothing needful to make it practicable for him to perform the part assigned him on graduating day. At this same school on graduating day I have heard the salutatory address by the daughter of an English immigrant laborer who can neither read nor write and the valedictory by the daughter of the wealthiest capitalist in town, while the most meritorious performance on the occasion was by a sister of the young man just referred to. This young man, it may be added, who has been during the five or six years since his graduation most industriously at work on his father's little farm, is an ardent friend of the high school, and he regards the "idea that education unfits a man for manual labor as simply nonsensical." The next neighbor to this young man's father is a man of the same nationality and in similar circumstances, who lately showed me with no little pride two silver medals which a son and a daughter now working together in the same shoe factory obtained at the high school. "But," said I, "I have just been reading the writing of a man of learning and influence condemning the free high school and arguing that it should be abolished." "That man," he replied, "I consider an enemy to his country." Such examples not only afford an illustration of the tendency of the high school to obliterate social distinctions, but they go to prove that it is a veritably national institution. It has struck its roots deep in the American soil, and there is no Vandal arm strong enough to pluck it up. More especially is the urban population of this country effectually indoctrinated in Huxley's creed that an adequate system of public schools must be a ladder with one end in the gutter and the other in the university.

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[1] Since this was written, it has received a considerable donation.

About twenty years ago certificates of graduation, usually called diplomas, began to be given to pupils in some of the most completely organized high schools on completing the prescribed course of study.

This practice has now become general, if not universal, and it has had an important effect. One of its beneficial effects has been to induce a considerable percentage of the pupils to complete the course who would otherwise have dropped off in its lower stages. It has raised the average scholarship by inspiring the laggards with the wholesome fear of the disgrace of failing to be enrolled with the graduates. It makes graduating day an occasion of great popular interest, well calculated to influence the decision of parents in favor of a higher education for their children. The diploma is commonly framed and conspicuously hung in the home, where it remains a precious memento and a perpetual recommendation of the high school.

Associations of alumni of the high schools have spread as far and as rapidly as the custom of awarding diplomas. These associations hold annual festivals of a mixed literary and social character, beginning with an oration or essays, speeches, and poems, and ending with a promenade concert or a supper and a dance. The history, the utility, the success, and the wants of the alma mater are the never failing themes of the occasion. It is easy to see that every gathering of this sort is a plea for the cause of the people's college, which cannot be in vain.

It appears from an examination of statistics that in the smaller cities the provision for high school instruction is relatively more ample than in the largest and most wealthy cities and that a greater percentage of the population is receiving higher education in the public school. In these respects our three largest cities, New York, Philadelphia, and Brooklyn, are far behind Albany, Cleveland, and Pittsburgh. Our two largest cities have each two public schools for higher education, and two only. These are all noble institutions and they are doing a service of incalculable value. But when compared with the great cities of Europe, New York and Philadelphia, to say nothing of Brooklyn, which is only making a beginning in high school instruction, are far behind. Ten years ago there were more boys attending the splendid public schools[1] for higher education in Vienna, without counting its university, with 4,000 students, its great polytechnic school, its superior school of commerce, or its normal schools, elementary and superior, than were enrolled at the time in the public high schools of the twelve largest cities in the United States. These schools were taught by 360 professors, each enjoying a permanent tenure of office, an irreducible salary, and a right to a very liberal retiring pension. In Berlin the whole number of municipal schools for the secondary instruction of boys is 21, namely, 10 Gymnasien, with 6,868 pupils; 7 Realschulen, with 5,110 pupils; and 4 industrial schools, with 1,216 pupils, the whole number of pupils amounting to 13,194. These schools are taught by 21 directors, 365 professors, and 54 masters—440 in all—whose annual salaries amount to 1,845,540 Mark—about $461,385. And, if the comparison were extended to Paris, the result would be no less to the disadvantage of our largest cities. It is clear that these cities, in order to keep pace with the demands of the times, must provide a greater number and variety of public high schools.

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[1] Prince Schwarzenberg, one of the greatest potentates of the Empire, told me that his grandsons were in one of these schools.

While the high school, which has been so rapidly extended and so liberally supported by the voluntary taxation of the people, is the flower of the system, it is not without its faults and imperfections. Free secondary education having now become a fixed fact, attention in the future will naturally be given in larger proportion to the work of perfecting its organization and management, so as to adapt it more completely to the wants of all classes of citizens and render it an instrument of the greatest possible good, accompanied by the least possible evil. In my view, the evil connected with the high school which most loudly calls for a remedy is the harm which it is doing to the health of the girls who attend it. This evil is not of recent origin. It dates back to the time when girls were first admitted to high schools; it is not limited to any particular description of high schools; it is found in both small ones and large ones, in separate schools and mixed schools. Nor is it restricted to any one region or section of the country; wherever there is a high school there the evil is found and there the application of the remedy should begin. Of course, the harm inflicted has its degrees. There may be schools under very judicious management of parents, committees, superintendents, principals, and teachers, where the injury to the health of girls has been reduced to a minimum. I am not aware, however, that such a school has come under my observation. On the other hand, there is a large number of schools, among which are some of the most noted in the country, where the injury inflicted upon the health of the female pupils is a very serious evil. What I mean is precisely this, that the evil of which I am speaking is general in our high schools and that the reform in this respect should be general; not that the evil reaches every individual pupil, but that it affects injuriously some pupils, even in the best schools, and a large percentage of the pupils in that large class of schools where as yet hygiene is only a word and not a reality. In justice to the public high schools it should be said, however, that the evil is not confined to them. It is quite as serious, if not more so, in the whole body of thoroughly organized institutions for higher female education. The causes of this evil are manifold. The following are some of them: Injudicious application of the marking system; injudicious system of examinations; too many studies; too many home lessons; an injudicious method of teaching, which confounds thoroughness with exhaustiveness; too much pressure to secure punctuality and regularity of attendance; rolls of honor printed in annual reports; competition for honors and medals; too long abstinence from substantial food and nourishing drinks; bad air; cold draughts; too many flights of stairs.[1] These manifold causes suggest the manifold remedies. The remedies can be more easily and effectually applied in separate schools than in mixed. To remedy the evil in question effectually in mixed schools without too great laxity towards the boys is no easy task. Higher female education has come to remain. It is a new element in modern civilization. It is a great boon. It has been attended with a lamentable evil which has largely offset its blessings. Let the remedying of that evil be one of the chief tasks of all earnest promoters of higher female education.

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[1] Here the Baltimore girls' high schools are the models, one flight only.

Among the important imperfections of the high schools I reckon that of the programs. I arrive at this conclusion by a comparison of our high school programs with the highly perfected programs or courses of study (we use the words indifferently) of the French and German, including German-speaking Austria. The program does not make the school, but a good program is an important element of a good school. In general the classical course is too much lumbered up with extraneous matters not requisite for admission to college. This error causes a serious loss of time to the students by delaying their admission to college one or two years after they are old enough to enter upon the college course with advantage. A boy of fair abilities and proper age could fit for any college in Latin and Greek with proper instruction in two years without injury from overwork. Pedagogical authorities seem to be settling down upon the conclusion that in secondary education instruction in the classics should be mostly limited to construing and to translating with correctness and elegance. In the non-classical course there is an immense waste of time in attempting to teach the speaking and writing of the French and German languages, and yet the task is never accomplished to any purpose. Nor need it be for students in general. The necessity for speaking any foreign language is so exceptional that this acquirement should be reckoned as a specialty, to be learned, if at all, outside of institutions for general education. If, for instance, a young man is destined to a diplomatic career, he should be able to speak and write both French and German. But it would be a prodigious waste of time to pursue these studies in an ordinary school for secondary instruction. He should either go to the countries where these languages are spoken or to a school where they are the specialties. Every educated man, however, needs to know how to read with facility both the French and German languages. To a certain extent the preparatory course should afford this instruction, which should be continued in the college. In the non-classical course facility in reading an ordinary book in French or German should be a fundamental requisite. This could easily be done by pursuing a rational method and discarding all attempts to write or speak these languages, and especially all attempts to acquire what is called a Parisian or Hanoverian accent. In the first place these accents cannot be obtained in our schools and in the next place if they could be obtained they would be as utterly useless to ninety-nine and nine-tenths per cent. of our pupils as the accent of the Choctaw language. An intelligible pronunciation, with due regard to the rules, is all that should be aimed at in such a course.

It is a noticeable fact that the number of girls in our high schools is in general quite in excess of the number of boys and that the number of girls who graduate is in still greater excess of the number of boys who graduate. Boys are too anxious, perhaps, to take a short cut to active business life. The average boy who has been kept in the grammar school until fifteen years of age looks upon the four-year high school course, which would carry him up to nineteen years of age, as too long for his purpose, and he is right. The case is different with the girls. What is required by the interest of the boy not destined to college or apprenticeship to a handicraft, but to practical business, is a non-classical high school course of three years, to which he can be admitted at thirteen or fourteen years of age.

In States having State universities, high schools are coming to receive State aid and some degree of direction and supervision by State officials. This highly important movement in the interest of high school instruction has for its object, primarily, to encourage the establishment and maintenance of free preparatory schools and to bring them into direct organic relations with the university. Minnesota has a high school board composed of the governor, the State superintendent of public instruction, and the president of the State university, ex-officiis. The main functions of this board are to determine the qualifications of the teachers, course of study, and the standard of examination for graduation. Each school submitted to the direction of the board in these particulars receives a sum not exceeding $400 from the State treasury. By the report of the board (1883), it appears that the board had under its supervision forty-nine high schools, with an enrolment of 2,417 pupils. The board obtained reliable information of the condition and progress of these schools by inspections made by the secretary and examiner of the board and by several members of the faculty of the State university, as they had been appointed. These inspectors have made careful inquiry into the thoroughness of the instruction, the facilities afforded in buildings, apparatus, and libraries, and have submitted written reports of their visits for the information of the board. There seems to be little room for doubt that provision for State supervision of high schools is needed, not only in States having State universities, but in other States as well.

The following modes of determining the qualifications of candidates for admission to high schools are those mostly in vogue, namely: (1) By competitive examinations, the number to be admitted being previously fixed; (2) by a pass examination, the candidates reaching a certain predetermined percentage being admitted; (3) the graduating diploma of the grammar school is accepted as evidence of qualification; (4) recommendation by the principal of the grammar school, but the candidates are all admitted on probation; (5) by quotas sent up by wards or districts—example, Philadelphia. Of these, number 3 appears to be the most logical and rational.

EVENING SCHOOLS.

The evening school is the natural and necessary complement of the day school and is designed exclusively for persons who have passed beyond the age to which education in the elementary school is usually limited, namely, the age of fourteen years, and more especially for adults of both sexes. The initiative in the establishment and maintenance of the evening schools has generally been due, both at home and abroad, to the efforts of organizations outside of the public authorities, either charitable, religious, or educational. These agencies have rendered great service to the cause of education in various countries by thus supplementing the provisions made at the public expense for the instruction of the people. But experience has proved that the interests of adult education are too vast and important to be left wholly to voluntary effort for their support and management. Hence evening schools have become in various countries a permanent part of the public school system. In England more than thirty years ago a vast system of adult evening schools was established for instruction in elementary art and science as a means of promoting the very great industrial interests of that manufacturing country. In several of the continental countries the attendance of apprentices at supplementary schools, either on afternoons, evenings, or Sundays, is made compulsory.

The lowest and simplest function of the evening school is to afford to illiterate adults and youth who have passed beyond the elementary school age the means of acquiring the rudiments of knowledge, such as reading, writing, and the simple rules of arithmetic; but in our cities there is happily a rapidly increasing number of youth and adults engaged in industrial occupations during the day who desire to devote their evenings to the acquisition of knowledge, either industrial, as a means of promoting their success in their respective callings, or general, as a means of mental culture and intellectual development. Hence the demand for evening high schools, with both liberal and industrial courses of study, and evening drawing schools of different grades.

Evening schools for manual training and the teaching of the elements of the various trades might be useful in meeting the educational needs of still another class of pupils. In few, if any, of our cities do we find a completely developed and thoroughly satisfactory system of evening schools, although no little progress has been made in this direction during the last two decades. In many cities there are no evening schools of any description; in the class ranking next higher in the scale of progress some provision is made for evening schools by voluntary effort; in the next stage of development we find elementary public evening schools more or less efficient; in a small class the evening high school is added; and finally the evening drawing school has begun to be adopted as an integral part of the public school system.

ELEMENTARY EVENING SCHOOLS.

The elementary evening school is necessary in proportion as the elementary day school has failed in the accomplishment of its legitimate object. Were all the pupils of proper age entered at the public elementary day school and continued through the course of its several grades, they would have no occasion afterwards to attend the evening school in order to learn to read, write, and cipher. The purely elementary evening school, therefore, is a makeshift to supply a temporary want which will cease to exist as soon as the public school system becomes what it should be. In the mean time it is an actual necessity as the means of preventing illiteracy, so far as possible, among the youth who failed to acquire the rudiments of education during the school age, and of reducing to some extent the illiteracy of adult immigrants. The necessity of this class of schools is thus stated by the standing committee (Mr. John Shedden, chairman) of the Philadelphia school board:

> The night school has become an actual necessity. Although the legislature of the State has been alive to its duty to the children of the Commonwealth, by the enactment of laws forbidding the employment in factories, &c., of children of tender age, yet, by the cupidity of some parents, the ignorance of others, and in many cases from financial necessity, the law of the State is openly violated at the expense of these helpless children. The night school is their only hope. There are persons holding eminent positions, useful to the community, that owe their educational advantages entirely to our night schools.

While the elementary evening school has been doing much good where it has been introduced, its results have very generally been far less satisfactory than could be desired. Where statistics are reported, the difference between the total enrolment and the average number belonging is shown to be very great, indicating that the average period of attendance is remarkably short.

The school statistics of St. Louis[1] show that for many years nearly one-third of the pupils enrolled each year attend less than twenty evenings and over one-half attend less than thirty evenings during the entire term of sixty-four nights. Moreover, the attendance of the actual members is usually very low; in Boston, for example, according to the report for 1881, the attendance reached only 54 per cent.

It would be unreasonable to expect in this class of evening schools the same continuity and regularity of attendance common in day schools; but experience has demonstrated that not only the imperfect attendance but other deficiencies of these schools are susceptible of remedy. The chief cause of their inefficiency seems to have been due to the inferior qualifications of the teachers employed in them. In

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[1] Report of Superintendent Edward H. Long, 1881.

Boston the preposterous rule is in force prohibiting the employment in this service of any teachers holding positions in the day schools. Since the adoption of this rule the evening schools have too often been made the asylum of inexperienced and incapable teachers.[1] On the other hand, the Philadelphia board, finding that persons without experience as teachers were unfitted for the positions as assistants in night schools, adopted the rule that three years' experience as day school teachers be required of all applicants. It was found also that indiscriminate admission of pupils was followed by disorderly conduct and consequent waste of the public money. Accordingly, a rule was adopted "requiring that all minors applying for admission must be recommended by parent, guardian, or employer." These changes have produced the most beneficial results; the attendance has been improved and efficiency and good order have been greatly promoted.

The sessions of these evening schools are usually held for two hours, from 7 to 9, on three or four evenings each week during the winter term, beginning early in November and ending in the latter part of March, comprising about twenty weeks.

The success of these schools requires in the first place efficient principals and capable and experienced assistants. In the second place, they should be provided with good accommodations, and not be stowed away in damp basements, unventilated ward rooms, and dilapidated vestries. And then great attention should be paid to the classification of the pupils of these schools, so as to economize the teaching force as far as possible by substituting class instruction for individual teaching. As a means of encouraging the pupils to persevere in attendance and application to study it is desirable that the school should terminate with a public occasion and that on this occasion the meritorious pupils should be rewarded with medals, diplomas, and honorable mentions. At some of the evening schools in Paris it is customary to have such an occasion at the beginning of the term for the announcement of the awards for the term of the preceding year. I was present on one of these occasions which took place in the grand hall of the Trocadéro, which was packed with an interested audience of five or six thousand persons and presided over by a venerable senator and addressed by an eminent member of the Chamber of Deputies.

In some of the States, Pennsylvania and Massachusetts at least, the establishment and maintenance of elementary evening schools are made obligatory in certain cities and towns. In the latter State all towns or cities containing 10,000 inhabitants or upwards are required to make provision for instruction in evening schools in all the branches taught in the elementary day schools, including drawing, the history of the United States, and good behavior; "*and such other branches of learning*

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[1] Since the above was written the Boston school board has, after an unsuccessful experiment, strangely persisted in for many years, abolished the rule excluding teachers of day schools from service in evening schools.

may be taught in such schools as the school committee of the town shall deem expedient;" which means, of course, that the committee may set up evening high schools at the public expense if the funds therefor are provided by the municipal authorities. This statute is of recent enactment, but its fruit is already beginning to appear. For example the superintendent of public schools of New Bedford[1] says:

> When, a few weeks since, the new statute was partially applied in the south school, and pupils called for to make up a class in the higher grammar branches, some fifty young men eagerly presented themselves and have attended the sessions of the class very steadily ever since. This proves that there is a thirst for this kind of knowledge among those whom the statute is intended to benefit and that, when our evening schools shall be organized under attractive auspices, we shall have no lack of pupils.

It will be seen that the evening school of this description differs materially in character and function from the kind of elementary school we have been considering, being designed as a means rather of supplementing and continuing the day school course than of merely aiming to give the rudiments of instruction to the illiterate and to persons who may be ranked with the illiterate, and therefore comes more properly within the category of the evening high school.

EVENING HIGH SCHOOLS.

The evening high school is already an institution of no little importance in a number of the larger cities, and it has demonstrated by its results its right to a permanent place in the city systems of public instruction where the population is considerable; while the elementary evening school is most needed where the day school has been least successful in accomplishing its object, immigrant illiteracy left out of the account. On the other hand, the better the advantages of instruction in the day schools, the more completely they have succeeded in giving to all the children a thorough course of elementary instruction, the more the evening high school is in demand and the more largely will it be patronized. This consideration justifies the conclusion that the evening high school is not a temporary expedient, to be dispensed with in a more advanced stage of public instruction, but that it is an institution which has come to stay and that it has a more important future than can now be easily understood.

Cincinnati was perhaps the first city to incorporate this institution into her system of schools, something like twenty years ago, where it has continued to flourish and bear fruit. The requirements for admission are the same as those for admission to the upper grade of the grammar school course. In St. Louis there has long been an evening high school which is regarded as a preparatory department of the Polytechnic School of Washington University. The New York evening high school is a veritable college on a large scale and is conducted on the most liberal plan. The instruction is not confined to a fixed curriculum. The aim is to teach whatever branches the pupils wish to pursue. This school was opened in October, 1866, and has, during its eighteen years of existence, afforded larger opportunities for the acquisition of knowledge than any other school of this class in the country. The branches taught, as reported in 1883, are the following: Latin, history, political science, reading and declamation, English grammar and composition, German, French, Spanish, architectural, mechanical, and freehand drawing, penmanship, phonography, mathematics, arithmetic, bookkeeping, chemistry, anatomy, and physiology. The number of applicants for admission was about 3,000, of whom 1,655 were found qualified for admission; average attendance, 951; number of instructors, 22. The average age of students was over twenty years. There were 69 students who did not lose a single lesson by absence.

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[1] Mr. H. F. Harrington, in report for 1883.

Students who have made satisfactory improvement in their studies and who have not been absent more than fifteen evenings are entitled to certificates and those who have received three annual certificates are entitled to diplomas; 398 certificates and 49 diplomas were awarded at the close of the term.

The evening high school in Boston, which was established about twelve years ago, was uniformly successful until, in the reactionary movement in that city about four years ago, it was deprived of nearly all its high school studies. The result was that most of the pupils deserted it. It has, however, rapidly recovered its lost ground and is now larger and more prosperous than ever. At the present term (October, 1884), before the expiration of the time allowed for enrolment, the principal[1] reports 1,592 pupils admitted, classified, and in regular attendance, occupying to their full capacity all the school rooms in the vast block comprising the school-houses for the Latin school and the English high school.[2]

Considering the very large size to which both the New York and Boston evening high schools have grown, the time seems to have arrived when one or more additional schools of similar description should be opened in each of these cities. The convenience to the pupils would be thereby promoted, resulting in an increase of attendance.

These schools have certainly reached if not surpassed the highest limit of numbers allowable with regard to the greatest efficiency.

Brooklyn has taken a step in advance by establishing a *second* school of this class. As to the utility of the evening high school there seems to be but one opinion where it has been tried. If there is any class of persons for whom a city can afford to furnish free education it is that class of industrious young men and women who have neither the time nor means to attend a day school, but who are willing to devote their evenings to study. For my part I know of no sound argument for the maintenance of day high schools which will not hold equally good for the maintenance of evening high schools.

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[1] Mr. E. C. Carrigan, a member of the State board of education, who fitted for college in part, in this school.

[2] The number has since risen to about two thousand.

The evening high schools mentioned are confined to large cities; but it may be predicted with tolerable certainty that this kind of school is destined to spread into cities of moderate size, and even into small cities. We find that the city of Lawrence, Mass., with a population of less than forty thousand, has already opened an evening high school. The superintendent (Mr. J. L. Brewster), in his report for 1882, says:

> The evening high school meets in room 5, high school house, on Tuesday and Thursday evenings. It numbers eighteen gentlemen and ladies, most of whom have graduated from the grammar schools and wish to take some higher studies. Almost all pursue commercial arithmetic and book-keeping, under the class system; otherwise they take algebra, geometry, or physics, as each individual may require. Mr. Richardson, submaster of our high school, teaches this school.

There is also a flourishing evening high school in Lowell, Mass.

EVENING TECHNICAL SCHOOLS.

The high schools we have been considering are no more technical or industrial schools than the day high schools, although they give instruction in some branches of direct practical utility, such as book-keeping, penmanship, and phonography. But purely technical evening schools are also needed. An interesting and important movement in this direction has been made in Philadelphia. For twelve years or more a school has been carried on for the benefit of artisans engaged in any of the numerous industries for which that city is famed. This school occupies the commodious building of the Central High School, and the models, diagrams, and chemical and philosophical apparatus belonging to that institution are placed at the disposal of the instructors for the illustration of their lectures. The principal and his assistants are members of the faculty of the Central High School. In the principal's (Prof. Z. Hopper) report for 1882, the course of instruction is thus described:

> Four classes were formed in the general course, which included geometry, mechanical drawing, arithmetic, mensuration, chemistry, and natural philosophy. One of these classes was composed of men who had been members of the school during the preceding winters, and an advanced course was provided for this class. One class was formed for the study of architectural drawing and another class for the study of chemistry and natural philosophy.

The ages of the students were as follows: 132 of the pupils were from 18 to 21 years of age; 42, from 22 to 25 years; 25, from 26 to 30 years; 21, from 31 to 40 years, and 8 were over 40 years of age. There were 52 occupations represented, of which the carpenters numbered 33 and the machinists 32.

This industrial school is, perhaps, the first representative belonging to our public school system of that large and increasing class of industrial evening schools which are found in the larger towns of Great Britain and continental Europe, of which the free and public evening courses,[1] conducted under the auspices of the Association polytechnique (France), may perhaps be regarded as the type.

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[1] See Appendix A for sample program.

Who can doubt that industrial instruction of this description would be a boon to the artisans in all our important cities?

EVENING DRAWING SCHOOLS.

An act passed by the legislature of Massachusetts in 1870 made it obligatory for all cities and towns containing 10,000 inhabitants and upwards to make provision for giving free instruction in industrial or mechanical drawing to persons over fifteen years of age, either in day or evening schools, and at the same time authorized the towns containing a smaller number of inhabitants to provide such instruction.

By the operation of this law there are at the present time thirty-one cities and towns which are obliged to provide this instruction in industrial drawing, and this provision is made for the most part, if not universally, in evening drawing schools. Teachers for this department of instruction have been qualified in the State Normal Art School, which was established in 1873. No general report has been made as to the results of this instruction, and therefore information on the subject has to be sought in the school reports of individual cities and towns. The leading facts in regard to this instruction in a few sample cities are here presented. They are taken from such reports as happen to be at hand.

Lawrence.—Four schools; 4 teachers; 120 pupils. The schools are as follows: (1) A class in mechanical drawing on Monday and Thursday evenings; this class enrolls 64 members. (2) A class of 24 men in machine drawing; this is known as one of the second year's courses, and the members were prepared for their present work in the mechanical classes of previous years. (3) A free hand class of 24; there are several ladies in this class, and this department of drawing is a new feature in the evening schools and is still somewhat of an experiment. (4) An architectural class of 12 men meets in room 5, high school house, on Monday and Friday evenings. "The interest among the pupils was never better and the work done is excellent."[1]

Taunton.—One school, divided into two sections; 6 teachers; whole number of pupils, 240; average attendance, 174; cost per pupil for tuition and current expenses on average attendance, $6.41. Number in freehand classes, 141; machinery classes, 74; architectural classes, 15; perspective class, 6; modelling class, 15.

Worcester.—One school, 5 classes, 5 teachers, 255 pupils. The classes comprise one for beginners and one for advanced pupils in freehand drawing and beginners, and two advanced classes in instrumental drawing. "The pupils of the advanced classes are largely from the classes of previous years; the interest is steady and continuous and the progress of the class as a whole is very satisfactory. The advanced class has had lessons in perspective and in drawing from life."[1]

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[1] Superintendent J. L. Brewster.

New Bedford.—"A systematic course has been mapped out and the scholars [of the evening drawing school], as far as their education will permit, are following it.

"In this connection we would repeat a former suggestion that somewhere, either in the last year of the grammar school or in the early part of the high school course, the elements of geometry be so pursued as to enable boys wishing to become mechanics to make a better use of their time in the evening drawing school than they can now do."[2] Average attendance, 21.

Boston hastened to comply with the requirement of the statute by opening, in the autumn of 1870, an evening school for industrial drawing, in spacious and commodious rooms, which were soon filled to their utmost capacity with earnest pupils. About a thousand applicants registered their names, a large proportion of whom could not be admitted for want of room. Upwards of five hundred pupils received instruction for a longer or shorter period. The total cost for the term was a little upwards of $6,000. The school was a success from the beginning. "It is by no means a contrivance for teaching at the public expense an unimportant accomplishment to a few idlers and drones. It is a wise provision for furnishing the young artisans and skilled laborers in various crafts the technical instruction which they need, and which they cannot get except by means of schools of this description. Such an educational improvement as this, once introduced into this city, can never be abandoned, because it meets an immediate and pressing want of the times; the more it is known the more highly it will be appreciated."[3]

Fourteen years' experience has justified this assertion. The evening drawing schools have constantly grown in public favor and efficiency.

According to the latest report there were 5 schools, 13 teachers, and an average membership of about four hundred.

As the result of an examination of these schools in 1883, 17 partial certificates and 121 full certificates were awarded to students in the first year class, and 49 diplomas to members of the second and third year classes.

"The awards made at the annual exhibition of evening school drawings were as follows: Whole number, 77; of these 13 excellent and 18 honorable mention were given for first year drawings and 22 excellent and 24 honorable mention for second and third year drawings. The exhibition at which these awards were made was held early in June, at the drill hall of the new high school building, which proved to be an admirable place for the purpose; and the public distribution of the certificates and diplomas, which took place in the English high school hall, at the close of the exhibition, was a very interesting occasion. * * *

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[1] Report of superintendent, Dr. A. P. Marble, 1880.

[2] Report of committee on drawing, 1881-'82.

[3] Report of superintendent, 1871.

"The late important changes in the program of drawing for the evening schools has made the whole course more practical in character, the subjects of freehand and instrumental drawing being taught separately in two schools and the subjects of study in all of them made elective as far as possible. These changes, which were carried out during the past winter, have worked admirably well in practice, resulting in a better average attendance than hitherto, for the reason that students, finding the different courses of drawing better adapted to their actual needs as individuals, have attended more regularly and in much larger number through both terms."[1]

The question of the continuance of these schools seems to have been settled beyond a doubt. Appropriations for their support are as much a matter of course as appropriations for the support of primary and grammar schools.

The great system of public instruction in the city of New York, so vast in its proportions and so excellent in very many of its features, does not, as yet, comprise independent evening schools for industrial drawing. This regrettable deficiency is, however, to some extent, though all too limited, supplied by the evening drawing classes taught in the Cooper Institute and by the provision for classes in architectural, mechanical, and freehand drawing in the admirable evening high school. If we look to the systems in the great cities of Brooklyn, Philadelphia, and Baltimore and those of the great western cities, we find a similar or, perhaps, even greater deficiency in this respect. We have no standard at home by which to measure this deficiency. What has been done in Boston is something real, but I regard it as only a good beginning and by no means a finality. One must go to Paris or Vienna for an example of what can and should be provided in a great city in this department of industrial education. In the latter city there are eight or ten large Realschulen and Realgymnasien conveniently located in the different sections of the city. In most if not all of these great institutions evening classes, numerously attended, are taught industrial drawing by accomplished masters. The instruction thus given leads up to the great industrial art school in connection with the magnificent museum of industrial art which was established some fifteen years ago at the expense of the government. I see no reason why New York or Philadelphia should be behind Vienna in public provision for instruction of any grade or description. Why should not the compulsory act of Massachusetts, in respect to this branch of technical education, be adopted by other States, especially those having important manufacturing interests?

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[1] Report for 1883 of Mr. Henry Hitchings, director of drawing.

NORMAL SCHOOLS.

There is a constantly increasing demand for trained teachers. This demand is more marked in the cities than in the country. A very large proportion of the graduates of State normal schools find employment in the city schools; but the supply from this source is inadequate. Hence the city boards of a considerable number of the larger cities have made provision, more or less extensive, for the professional training of teachers for the schools under their charge. The supplementing of the supply from the State normal schools has not been the sole motive of making this provision. Another argument in its favor is found in the fact of the increased facility thus afforded to home talent for professional preparation. And, besides, it is generally believed that home-trained teachers may be better adapted for the service to which they are destined.

The establishment of city normal schools is by no means a new idea in our educational economy. It appears that the legal provision for the first city normal school antedates by about twenty years the establishment of the first State normal school. The city of Philadelphia took the lead in this matter. In the "Act to provide for the education of children at the public expense, within the city and county of Philadelphia," passed in 1818, it was made the duty of the controllers, who were intrusted with the administration of the schools, "to establish a *model school*, in order to qualify teachers for the sectional schools and for schools in other parts of the State."

A model school was organized in accordance with this provision and placed in charge of Joseph Lancaster, the principal promoter of the system of organization and instruction which bears his name. This was not only a pattern school, but it was, to some extent, a school of practice for the training of teachers in the organization and management of schools on the monitorial or Lancasterian plan. It was not until 1848, however, that this school was reorganized as a normal school according to the present idea of such an institution. Such were the ability and devotion of the first principal (Dr. A. T. W. Wright) and the sympathetic coöperation afforded him by the controllers that this institution took rank, almost from the beginning, as a model normal school. In respect to its course of study, its plan of training pupils in the school of practice, and its methods of instruction, it was little, if any, inferior to the best normal schools of to-day. When this was the only city normal school in the country Dr. Barnard, in giving an account of it, expressed the opinion that the reading of the admirable report of the principal, by city school officials, would lead to the establishment of similar schools in all the large cities. Since that time the number of city normal schools has been steadily increasing. In no city where the experiment has been tried to any considerable extent has it been abandoned, except in the city of Chicago.

We find among these schools not only a difference in name, but also a wide difference in character. They may, however, be classed, with sufficient accuracy for our purpose, under four types of organization:

(1) The great City Normal College of New York, which performs the twofold function of a girls' high school and a normal school, without any recognized distinction of general and special courses in the curriculum. Its pupils are received directly from the grammar school. The course comprises four years and is mostly devoted to general studies. The Philadelphia school, as at present conducted, belongs to this type.

(2) The City Normal School, St. Louis, which is a purely professional school, with a course of training comprising two years. The pupils must be graduates of the high school or must possess equivalent qualifications. To this class belong the schools of Cincinnati, Boston, and Washington, D. C., and perhaps those of Indianapolis and Cleveland. In the schools of this class, except that of St. Louis, the course is limited to one year. This is the most completely developed type of normal school in the country, it being that in which specialization is carried furthest.

(3) The organization commonly designated as training school for teachers, comprising a practice school of several classes, taught by pupil teachers, under the direction of a training principal. These pupil teachers are usually selected from the most promising candidates for the position of teacher who are waiting for an appointment. The following account of the training school in Portland, Me., from the principal,[1] will sufficiently illustrate the organization and operation of this class of institutions:

> The school [of practice] has numbered about 200 pupils during the past year and is divided into six grades. The work done in each grade is the same as in similar grades in the other primary schools in the city.
>
> There are eight [pupil] teachers assigned to the practice school at the beginning of each year, and when a vacancy occurs by the removal of a teacher to another of our public schools a new teacher is appointed to fill the place. There are four rooms; in each room two teachers, one acting as principal and the other as assistant. When a change of classes is made, which is done every three months, the teachers who have acted as principals become assistants. Each teacher, during the year, gets practice in three grades. To give practice in more grades would be detrimental to the school.
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> The work of the practice class has combined theory and practice, or the study of methods of teaching and training in the practice school. Instruction has been given in the various subjects taught in the schools and in the principles of teaching. To avoid as much as possible the laborious task of note taking, Brooks's Manual has been used as a text book. The last part of the year was devoted to school economy. The class have remained an hour after school, at the close of the afternoon sessions, for these lessons.

In training schools of this class the pupil teachers receive little or no salary for their services. The cost, therefore, of carrying on the training school in connection with the school of practice is even less than the cost of carrying on the school used for practice in the ordinary way.

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[1] Miss Sarah M. Taylor, report of 1881.

This fact renders the establishment of a training school a comparatively easy matter. Considering the cheapness and the great practical utility of this provision for the professional training of teachers, it is surprising that it has not been more generally adopted. There are probably less than a score of cities where this sort of a training school is to be found.

(4) District normal departments of high schools. Perhaps the most important department of this sort is that connected with the girls' high school of San Francisco. This department is composed of post graduates of the school. In some years the number of pupils in this department has been as high as 150. In consequence of the large number of high school graduates desiring to enter the normal department, the board, in 1882, limited the number to 56, admitting only those that ranked, at graduation, 80 per cent. or over. In 1883 the board continued a similar provision, limiting the attendance to 60. The course of instruction is one year. This department was established in 1876 for the purpose "of organizing a department which shall afford its members the means of preparation for the University of California and for the occupation of teaching."

From 1876 to 1880 the normal class maintained a precarious existence, opposed, as was to be expected, by the conservatives that oppose any new thing because it is not old and by untrained teachers that have an instinctive antipathy to skilled labor.[1]

In the high school of Pittsburgh there is a normal department, though of quite an elementary grade. The pupils come directly from the grammar schools and pursue a two-year course differing not materially from the academic course, except in the substitution of instruction in the theory and practice of teaching in place of one or two branches in the latter course.

The diploma of this department is given by the city superintendent to such as make, at his examination, an average of 85 per cent. in each study of the second year. This diploma, by the law of the State, is equivalent to a professional certificate.[2]

In a number of important cities there are State normal schools which render the establishment of city normal schools unnecessary. The largest of these cities are the following: Baltimore, Providence, Trenton, Albany, Buffalo, Oswego, Salem, Mass., and Worcester. In some other cities there are normal departments in universities and colleges, which to some extent supply the place of city normal schools.

In some instances these departments have scarcely more than a nominal existence, differing from the other departments of the institutions to which they belong simply by the omission of a portion of the regular course and the substitution of a course of lectures on education.[3]

The New York board of education is required by law to establish a normal school or schools not only for those desirous of becoming teachers, but also for teachers, which shall be attended by such of the teachers in the common schools as the board of education, by general regulation, shall direct, under penalty of forfeiture of their situations as teachers by omitting to attend, which forfeiture shall be declared by the board of education.

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[1] Report of Hon. John Swett, principal, 1883.

[2] Report for 1880 of the principal of the high school, Dr. C. B. Wood.

[3] Report of the Commissioner of Education for 1880.

In conformity with the latter requirement a school has been maintained for many years. It is held on Saturdays and those teachers holding the lowest grade of certificate are required to attend. The instruction has been mostly limited to the subjects required to be taught in the elementary schools.

The Ohio school law provides for the holding of an annual teachers' institute one week in the cities of the first class. In accordance with this provision an institute is held in Cincinnati during the week prior to the annual opening of the schools, which all the teachers of the common schools are required to attend. This institute is open to all persons who desire to become teachers in the common schools of Cincinnati. A certain quota of the State normal school fund is allowed for defraying the expense of such institute. The program of the institute for 1882 comprised the following subjects: Territorial history of the United States, the age of ice, anatomy and physiology of the eye and ear and why we use glasses, Westminster Abbey, our American poets, a question of to-day, Daniel Vaughn, talent and genius, arithmetic, orthography and language, physics, drawing, penmanship, music, language, reading as it ought to be taught, the new course of translation, object lessons, public examinations, self made men, and literature.

In Boston, for a number of years past, Saturday courses of lectures have been provided for the teachers, on the elements of the different departments of natural history, at the expense of Mrs. A. Hemenway. Other courses have been provided for by the board, on the methods of teaching the various branches in the common schools. Attendance on these lectures is optional.

The city normal schools are attended almost exclusively by female pupils. An exception is found in the Cincinnati Normal School, which reports three males in attendance. Those of the first and second categories are conducted by male principals. The Cincinnati school has a German department, under the charge of an associate male principal.

Special courses of lectures on the history and science of education, the theory and practice of teaching, and school hygiene have been provided for the public school teachers of Philadelphia. A very complete and comprehensive syllabus of the topics embraced in these courses has been prepared by Superintendent MacAlister.

In one important respect the city normal school has peculiar advantages, namely, in the provision for model schools and schools of practice. Some of the city normal schools, however, and particularly the training schools for teachers, are not so well furnished with this means of training as could be desired, the school set apart for this purpose comprising, in too many cases, only the primary grade or some lower grammar classes in addition. They ought also to comprise pupils of each sex. Even so important a normal school as that of Philadelphia has only classes of girls in the grammar grade of its school of practice. Abundant proof of the excellence and success of schools of practice connected with city normal schools is afforded by the fact that parents are very generally anxious to secure places in them for their children.

The plan for the practical work of the students of the St. Louis Normal School includes four features: (1) Visits to the training school for the purpose of observation; (2) object lessons given to classes of children sent to the normal school once a week; (3) teaching a class in the training school, under the supervision of a critic teacher; (4) teaching in the place of absent teachers in any city school.

The study of city normal schools leads me to the conclusion that the type comprised in the second category, mentioned on p. 42, is the normal type of city normal schools. This is the purely professional type. It does not pretend to give academic instruction. It receives only pupils of mature age, who have successfully passed through the high school course of instruction. For admission to the most advanced schools of this kind the applicant must be at least eighteen years of age and must have completed a high school course of four years. In the State normal schools, as a general thing, in the East, at least, much the greater part of the course of instruction is devoted to academic studies. There being no distinct division between the academic and professional instruction, both are carried on simultaneously. There are those who contend that this is the ideal plan of the normal school. The argument in favor of this plan is based mainly on the assumption that normal pupils cannot obtain a good general education in non-professional schools, or, what amounts to the same thing, that a supply of normal pupils who have received the requisite general education cannot be had. But this assumption is not applicable to city systems in this country. The Cincinnati board of education can provide just as good general education for pupils in a school organized as a high school as in a school organized as a normal school, and so can any other city. The normal school forms no exception to the general principle that in all institutions of education both economy and efficiency are promoted by simplification of function. It is not strange, therefore, that the ideal type of the professional school for the training of teachers should be first developed in cities where candidates in sufficient numbers who have completed the high school course present themselves.

The history of the modifications of the provisions for the professional training of teachers in our cities, which have been going on during the last quarter of a century, makes it clear that the tendency has been and is now everywhere towards the purely professional normal school, with its school of practice, comprising pupils of all grades and both sexe thoroughly equipped and provided with teachers of the highest order, thus serving the purpose of a school of observation and a practice school.[1]

The training school of the description referred to above—the most rudimentary type of the training school—takes its first step towards the ideal standard by employing regular teachers in its school of practice, thus leaving its pupil teachers, on the one hand, more time for theoretical study, and, on the other hand, affording them more supervisory direction and criticism in the class room.

In the New York and Philadelphia schools, where the general education and the special training are carried on simultaneously, we observe the gradual evolution of the distinctly professional department, composed of the post graduate pupils. As soon as such a department is clearly differentiated, as is the case with the normal department of the San Francisco school, it only remains to place this department under a competent master, wholly devoted to its management and training, and we have the realization of the ideal type of the normal school.

All competent authorities agree in the opinion that a course of special training in the theory and practice of teaching should be insisted upon as a prerequisite to the occupation of teacher. In no department of school economy is there a greater waste of the public money than in the employment of untrained teachers. No doubt very talented young ladies, with only a high school education, often do well, but with an added normal training they would do much better. My own experience and observation in the direction and supervision of normal schools, of all the different descriptions known among us, and of city schools, lead me to conclude that, during the first years of service, the trained teacher is worth about twice as much as the teacher who has had no professional training. No city can afford to employ untrained teachers. Limited advantages of training are better than none, and, as has been shown, the advantages of the rudimentary type of the normal school are easily within the reach of every city. This being the fact, it is not easy to see why our cities have not more generally availed themselves of these advantages. It appears by the latest Report of the Commissioner of Education that the whole number of cities reported in 1882 as having schools or departments for normal training was only twenty-one. The actual number was, perhaps, somewhat larger than this; but, all told, it is a small minority of the whole number.

It is a noteworthy fact, as evidence of the slow progress of educational ideas, that in some cities where normal schools have existed for years school boards still continue to refuse the graduates the recognition which is justly their due. In his report for 1883, the superintendent of schools of California remarks in relation to this matter as follows:

> There is in connection with the girls' high school a normal class, where some sixty young ladies are prepared annually, at the expense of the city, for the profession of

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[1] For courses of study in the St. Louis and Boston Normal Schools, the reader is referred to Appendix B.

teaching. The teachers of the lower grades might all be taken from this class. To do so would be a long step in the right direction. Not to do so is to incur expense without a return.

The Cincinnati board, with glaring inconsistency, maintains a normal school and at the same time provides by a solemn ordinance that no preference shall be given to the graduates thereof in the appointment of teachers. In another city in the same State (Dayton), however, we find a sensible contrast to this strange policy in the following remark of the committee on the city normal school:

> This is the most important department of our educational work. It is the centre, the very heart. Strength or weakness here will soon be felt in every district, grade, and room in the city, for from it most of the teachers come. * * * A favorable comment upon the workers and the work done in the past is that but two are without employment.

THE KINDERGARTEN.

The Kindergarten is a school for children from three to six or seven years of age, conducted, both in respect to discipline and instruction, in accordance with the method of training invented and expounded by Fröbel. The Kindergarten differs from the ordinary school both in its aim and methods. In the latter the work of the teacher consists in helping the pupils to acquire a certain amount of positive knowledge, and this is equally the case whether the knowledge taught is for its practical utility or as a means of culture: in substance, its method is the imposition of tasks; if the pupil likes it, well; if not, the obligation is the same. In the French pedagogical nomenclature, therefore, the word that stands for school task (devoir) is very properly the word that signifies duty. Even where courses and studies are optional, the method is the same, for, the course once chosen, performance of the tasks is exacted. The sole aim of the Kindergarten, on the other hand, is the development of the faculties, the communication of practical knowledge for its own sake being wholly ignored. Its method consists, essentially, in superintending and guiding the spontaneous activity of the child. The spontaneous activity of the child is manifested in play; hence its process consists chiefly in ingeniously contrived plays, requiring the exercise of invention, taste, and mechanical skill. It wholly excludes reading and writing, regarding the child as a *doer* primarily and as a *knower* subsequently.

The promoters of the Kindergarten differ more or less in their interpretation and application of the system of Fröbel. The chief apostle of the system in America excludes the employment of authority and discipline and the use of imitation as a means of culture and development, while in Vienna, where the Kindergarten has found more favor than in any other European city, authority in government and imitation in training are held to be essential elements in the system. In the normal Kindergarten of that city I saw the rod literally in the hand of the Kindergartner. In America it is held that the number of children in the Kindergarten should not exceed twenty-five, and this is found to be as many as can be well managed even by a first rate Kindergartner, who is not permitted to use authority in government. In Vienna it was common to find fifty children in a Kindergarten. These illustrations go to show that infant schools recognized as genuine Kindergärten are by no means the same in all their characteristics.

The Kindergarten has been introduced and maintained thus far in our cities chiefly through voluntary effort. The centres from which has radiated the influence in favor of spreading the system are Boston, through the labors of Miss E. P. Peabody and her sister, Mrs. Horace Mann; New York, through the labors of Miss Bölte, now Mrs. Kraus; and St. Louis, through the efforts of Miss Susan E. Blow. Private Kindergärten are now found in many cities and their number is increasing with marked rapidity. They consist, for the most part, of two very different descriptions:

(1) Those for children of wealthy parents. Speaking of the Kindergarten normal or training schools, Mlle. Loizillon, in her recent Report on the Kindergarten in America, says:

> It is to be feared that, on account of the reception of children of the wealthier classes — who many times have been favored and spoiled at home — certain concessions will be made in the Kindergarten which may be opposed to the principles of the system, and, by introducing disturbing conditions, may have an unfortunate influence on the pupil teachers.[1]

(2) The free Kindergärten, provided by individual or associate charity for the most indigent class of children. This charity is designed (in the words of one of the reports on the subject) "for the benefit of little children, too young to be admitted to the public schools, who, in winter, are often locked into their comfortless homes while their mothers are out at work, and, in summer, are locked out of them, exposed to all the corrupting influences of the streets and alleys." The initiative has been made in establishing one or the other of these Kindergärten in a considerable number of our cities.

It appears by the Report of the Commissioner of Education that at least some beginning had been made in Kindergarten work in no less than twenty-eight States and Territories; that there were 348 Kindergarten institutions, with 16,916 pupils, taught by 814 teachers. These Kindergärten are nearly all private establishments, the exceptions being those belonging to the public school systems of St. Louis and Milwaukee. The school board of the latter city decided in 1882 to annex the Kindergarten to the public school system and opened a training school for the training of Kindergarten teachers. Mlle. Loizillon remarks that —

> It is at St. Louis and at Boston that Kindergärten are found the most interesting to study, not only on account of their number and origin, but also on account of their organization and the unity which presides over their direction.

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[1] Rapport présenté à M. le ministre de l'instruction publique, page 14.

The flourishing Kindergarten system of St. Louis owes its origin to the singular devotion and ability of Miss Susan E. Blow and the coöperating influence of the former superintendent, Dr. Harris. It dates from 1873. Such was the success that at the end of six years the number of Kindergärten increased to 53, with 196 teachers and an enrolment of 6,202 pupils. After so long an experiment on so large a scale, the eminent superintendent concludes an elaborate and sound discussion of the subject with the expression of the opinion that the advantage to the community in utilizing the age from four to six in the Kindergarten will ultimately prevail in securing to us the establishment of this institution in all the city school systems of our country. In the latest report at hand of the present superintendent (Mr. Edward H. Long), we find that there are upwards of 30 Kindergarten establishments, comprising 60 Kindergärten, each establishment having, as a rule, two Kindergärten, one held in the forenoon and one in the afternoon. They are taught by 231 teachers, of whom 178 are paid and 53 are unpaid, with an average membership of 4,515 and an average daily attendance of 3,926. It is evident, therefore, that in St. Louis the Kindergarten has conquered the right to be, and, moreover, the right to be a constituent part of the school system.

In the mean time the result in Boston has been quite different. The school board established an experimental Kindergarten simultaneously with the movement in St. Louis, in a good neighborhood, where it was eagerly patronized by well-to-do parents.

After this Kindergarten had been in successful operation for several years the superintendent,[1] having observed for one year its working, said in substance in his report that, whatever the Kindergarten *theory* might be, Kindergarten practice seemed to be defective in forming habits of attention and self control, and his conclusion was that the Kindergarten is rather a private charity than a public school. Accordingly, this experimental Kindergarten was closed and a charity system was inaugurated. This charity system owes its origin to Mrs. Quincy A. Shaw, the daughter of Agassiz, who alone has furnished the means for its support, with the exception of the use of a certain number of public school rooms allowed for its use free of rent. This charity now supports thirty Kindergärten, comprising 1,800 pupils, and is directed by a competent superintendent. These Kindergärten are located in the poorest sections of the city and have proved an inestimable blessing to the children for whom they are intended.

Considering the liberality in providing for education in our country, the general neglect in regard to infant schools is not easy to account for. One reason for it may be found, perhaps, in the fact that children of five years of age and upwards have been very generally provided for in the primary schools, and the margin below that age is rather restricted for the Kindergarten. And, again, it must be remembered that to furnish school accommodations to meet the demands of the rapidly growing population of our cities has so severely taxed the resources at command as to make it impracticable, as yet, to make provision for children of a more tender age. Nevertheless, the large study of city systems of instruction makes it evident beyond a doubt that provision, either public or charitable, especially for the benefit of indigent children, is an imperative necessity in all considerable cities, but more especially in those of crowded populations. In many foreign countries great progress has already been made in this direction. In Great Britain the infant school is universally regarded as an essential part of the public school system. The infant schools provided by the London school board are numerous and they are admirably installed in commodious buildings. Those visited by me a few years ago were accommodated in new, substantial, and well contrived edifices only one story in height. In England and Wales there were on the rolls in 1882 416,126 infants under five years of age, while in Scotland there were 114,267 enrolled upon the school registers, 25,987 of whom were instructed in infant schools proper.

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[1] Dr. Samuel Eliot, elected 1878.

In France, the infant schools, called maternal schools, a name which seems peculiarly felicitous, are perhaps more thoroughly and systematically provided for than in any other country. This province of education is organized into a complete system, with its normal schools, its hierarchy of teachers and inspectors, its program, and its legally prescribed provisions of installation. By a recent report it appears that there were comprised in this system 4,870 maternal schools, with 7,451 teachers and 621,177 children. Mlle. Loizillon, whose report is above referred to, is the general inspectress of these schools. The foremost promoter of improved methods of instruction and training in these schools was Mme. Pape-Carpantier, the most eminent female pedagogue of France, who directed the first normal school for the training of infant school teachers. She wrote numerous treatises on the subject. The international jury of the exposition of 1878 was only prevented from awarding her the highest honor for her services by her sudden death, which took place while the jury was in session.

In other countries, by voluntary effort or by public provision, especially in the largest cities, infant schools are more or less extensively maintained for children below the school age. Kindergärten proper are not perhaps very numerous, but the methods of Fröbel's system are making their way very generally into all the varieties of these infant schools.

STUDIES.

The old standard subjects of elementary instruction are uniformly retained, namely, reading, spelling, writing, arithmetic, grammar, geography, and history of the United States: comprising the trivium, or three R's, of the ancient school for the people, and the quadrivium, which is the accession of a more advanced era, and yet an era preceding the modern school revival, dating back about fifty years. The last half century has witnessed a very considerable increase in the subjects of instruction. These subjects are object teaching, singing, drawing, gymnastics, vocal culture, English literature, natural history, physics, history of England, algebra, metric system, physical geography, physiology (including anatomy and hygiene), geometry and mensuration, bookkeeping, astronomy, the German language, Constitution of the United States, general history, sewing, and perhaps some others. But there has been the greatest diversity with respect to the adoption of these additional subjects. In respect to some of them there has been a great deal of fluctuation and change. Some of them, the German language for example, have never been made obligatory, even where the provision for instruction in them has been the most extensive. There is probably no city system where all these subjects, at present, find a place in the program. Some of these subjects have come to be almost as generally considered essential as grammar and geography; among them may be mentioned object teaching, singing, and the elements of drawing. Algebra is probably now a less generally required branch than it was forty years ago. It is now on the optional list in New York, while it is obligatory in Philadelphia. But it is included in very few programs. In a few instances, the requirements are not the same for both sexes, a recognition of the fact that the destination in practical life of the sexes is not identical and therefore does not demand an identical education. In Philadelphia, English literature is assigned to the upper class of the girls' schools, while physics is assigned to the upper class of the boys' schools. It is evident that all these new studies cannot be added to the old curriculum without greatly extending the period of elementary instruction or restricting them to very narrow limits. The attempt to introduce too many of them without providing for the necessary limitations in respect to matter and methods has resulted in too many cases in serious evils, such as cramming, the overwork of pupils, and the want of thoroughness in teaching. All these subjects are desirable, but not equally desirable, in an elementary education.

The remedy for the above evils, which are always greatly exaggerated by the enemies of the schools and sometimes by their friends, is not that which is most commonly proposed by hostile and unwise critics, to throw overboard everything but the three R's. The true remedy consists in eliminating a few of the subjects which belong more properly, perhaps, to the high school course, in rigorously limiting the matters to be taught under each head to the requirements of elementary instruction, and in employing the most rational and concentrated methods of teaching. If English literature and algebra be omitted from the list it would be practicable, by the wise and thorough application of the remedy here proposed, to teach all the subjects, both of the old and the new curriculum, to good purpose without overtasking teachers or pupils. The problem is to know how to do it. This is, perhaps, the problem of problems for the superintendent.

In considering the subject of studies we come into view of the irrepressible controversy in the educational world, the combatants being on the one side the representatives of the aristocratic sentiment and on the other of the democratic. The democratic sentiment is always seeking to widen the base and elevate the standard of the education of the masses. The sentiment of aristocracy, while admitting the utility of giving the masses the rudiments of learning—the old trivium—is always in hostile array against every attempt to advance beyond that minimum. This conflict has been confined to no age or country. It goes on equally under republican and monarchical governments. On the aristocratic side it is beginning to be seen that, with modern improved methods, children cannot be employed on the old subjects alone if they are kept in school regularly during the proper elementary school age. It is therefore claimed by some that it is better for the masses of children to be kept in school only half of the time. But whole-time schooling and a generous curriculum being the evolution resulting from the advancement of the sentiment of democracy, they can be permanently set aside only so far as that sentiment is vanquished and crushed out. The desirable thing to do is not to reduce greatly the subjects of instruction, but to deal with them more wisely in the use of methods and in the framing of programs.

SUPERVISION.

In nearly all cases the school board is aided in the care and management of schools by a superintendent. This officer generally depends on the board for his election and acts subject to its control. He is selected as an educational expert, having usually received a liberal education, having had successful experience in teaching, and having acquired, by observation and study, information more or less extended as to approved methods of instruction and school economy in its various departments. He is required to devote himself wholly to the interests of the schools under his charge. His tenure of office is precarious, being subject to an annual or at best a biennial election. Perhaps in a very few exceptional cases the period of tenure is a little more extended. The salary in general does not differ materially from that of the principal of the high school, though probably in the majority of cases it is somewhat higher. In a few cities no superintendent is employed, the entire supervisory and directing service being performed by the members of the board. Such cities are justly regarded as being behind the times. Until recently the great city of Philadelphia belonged to this exceptional category. There are still belonging to it three cities of considerable importance in Essex County, Massachusetts, ranging in population from 13,000 to 27,000. In a vast majority of the cities a single superintendent is employed. In all the cities of the first class, however, with possibly one exception, one or more assistant superintendents are employed. The number of assistants in New York has risen to seven. In cities of the second class, also, assistant superintendents are beginning to be employed.

The duties of a superintendent are prescribed by the board, and are usually set forth in considerable detail in the rules and regulations. He is commonly regarded as the chief executive officer of the board, although this idea of the functions of his office is seldom, if ever, declared in prescribing its duties. The essential duties of the office are everywhere substantially the same, although in matters of detail there is considerable diversity among the city systems. The first permanent city superintendency was established in Providence in 1840. The duties prescribed for this officer I have not the means of knowing. One of the first cities to follow this example, although at a distance of more than a decade, was Boston, and at the head of the list of duties prescribed for the new officer was this:

> He shall devote himself to the study of our school system and of the condition of the schools, and shall keep himself acquainted with the progress of instruction and discipline in other places, in order to suggest appropriate means for the advancement of the public schools of this city.

Thus clearly and definitely was enunciated at the outset the highest and most characteristic function of the city superintendent as a professional expert in matters pertaining to public instruction. The supreme importance of this requirement has very generally been recognized by school boards in prescribing the duties of this official.

The duties of superintendents vary considerably according to the size of the system in charge; but personal supervision of the instruction and discipline and of the internal economy and management of the schools are the common requirements of superintendents in cities of all classes. In the smallest cities, the superintendent, being the only agent of the board, is necessarily a man of all work. He not only acts as adviser of the board and of its individual members and supervises, inspects, and examines the schools, but he has to provide, under the direction of the board, for all the material wants of the school. He superintends the repairs on the school-houses and assists in devising plans for new ones; he attends to the providing of fuel; he procures and distributes the supplies, not only of materials and apparatus for instruction, but also brooms, mats, dippers, and such like; audits the bills; prepares the pay rolls of teachers; acts as the secretary of the school board, and makes an annual report exhibiting the progress and condition of the schools. The usefulness of an energetic officer in such a situation, with the versatility of talent requisite for such varied duties, can scarcely be overestimated. In cities of a larger size, the specialization of the executive work is begun by the employment of additional agents for such branches of service as do not require the qualifications of an educational expert. This specialization goes on with the increase in the size of cities, the functions of the superintendent being correspondingly restricted until, in the very largest cities, as in New York, for example, his duties are mostly limited to what pertains to instruction, discipline, and school management. And even here—that is, in the large cities—we find again further specialization, not only in the employment of assistant superintendents, as above noticed, but also in the employment of special experts, as superintendents and directors of certain branches of instruction, such as modern languages, penmanship, drawing, gymnastics, singing, vocal culture, &c., these specialists being of course subordinate to the superintendent.

The one specific and comprehensive duty expected of every superintendent is to see, so far as practicable, that all the rules and regulations of the board are faithfully observed, not only by the pupils, but by all teachers and employés within the sphere of his authority.

A further analysis of the subject shows that city systems differ, not only in the range of the duties assigned to the superintendent, but in the very considerable diversity which exists in respect to the degree of power and authority with which this officer is invested; and this difference in respect to the limits of power is found to exist even where the sphere of duties is substantially the same. For instance, the superintendents of Boston and St. Louis are alike chiefly occupied with matters pertaining to instruction and school management, but the superintendent of the latter city practically exercises much larger powers than the superintendent of the former. He performs the duties and exercises the powers to a large extent which are assigned in the former, and indeed in most cities, to subcommittees on individual schools or districts. In connection with the committee on teachers he nominates candidates to fill vacancies in the corps of teachers and transfers both teachers and pupils from one school to another, and this means that practically the chief responsibility of this important part of the administration is in his hands.

In Boston, a few years ago, an exceptional and indeed quite abnormal provision was made for supplementing the supervision of the superintendent, which requires a brief notice. This provision consisted in the creation of a board of six supervisors, the superintendent being ex officio chairman. To the individual supervisors certain duties of supervision were assigned, in the performance of which they were responsible neither to their own board nor to the superintendent. Again, certain duties were assigned to the board, the examination of candidates for teachers, for example, irrespective of the superintendent, excepting his right to vote as the presiding officer of the board.

The individual supervisors were clothed with authority to prepare annually a schedule of the merit and standing of each teacher, as a guide for the school board in the annual election of teachers, subject to no control by the superintendent. The board of supervisors submitted an annual report on the condition and working of the school system, with recommendations as to the policy to be pursued, wholly independent of the report required of the superintendent. The practical working of this strangely anomalous and whimsical contrivance was what any unbiassed, practical man would naturally expect. There was no longer a responsible head. If the superintendent attempted to assert and maintain his prerogative as superintendent in chief the result was a conflict. If he accepted the situation, the superintendency became only a seventh supervisorship. Necessity has at length compelled some modifications of this unwise system of supervision, and the superintendent has been formally declared by the school board to be its chief executive officer, with some authority in directing the labors of the supervisors. As this scheme is without precedent, so it is believed it will have no imitators. The plan of assistant superintendents, after the pattern of New York and the other large cities, is the only rational mode of reënforcing and supplementing the one man superintendency. There is no longer occasion to seek arguments to prove the expediency of employing expert supervision of city systems of schools. The day for that service to the cause of education is in the past. That the superintendency has been the most effective instrumentality in bringing about the existing advanced condition of things in our city systems is beyond a doubt. Men of exceptional ability and devotion have been employed from time to time, in some cases for a series of years, in the more conspicuous situations in different sections of the country. These men, by their practical wisdom, their indefatigable labors, and their unselfish devotion to the best interests of the schools under their charge, have afforded noble models for imitation, whose widespread influence has largely inspired and shaped city supervision throughout the country. In a large number of less prominent positions, and even in humble places, superintendents possessing in no small measure desirable qualifications have been secured and retained for a longer or shorter period. But we are a long way yet from perfection in the matter of supervision. Too many school boards, through incompetence or indifference to the public interest, have employed superintendents of inferior qualifications. Incompetent teachers and inefficient schools are the inevitable result. Like produces like: as is the school board, so is the superintendent; as is the superintendent, so are the schools. It is hardly too much to say that the chief use of school boards is to get and retain and sustain good superintendents. Forty years ago there were no city superintendents, or next to none. Instruction in city schools then was scarcely better than instruction in country schools. The immense superiority of city instruction over country instruction at the present time is due mostly to the introduction of supervision. But the capabilities of this instrumentality have thus far been but partially utilized. Public sentiment should hold school boards to the strictest accountability in the choice and treatment of superintendents. Fifty years ago the Dutch common schools were the best in Europe; and Cousin, in stating that all authorities agree in attributing this superiority to the exceptional excellence of the supervision, relates that the venerable Van den Ende, who had been the chief administrator of the system for twenty-seven years, said to him, "Take care how you choose your inspectors; they are men whom you ought to look for with a lantern in your hand." The French philosopher, in framing the French system, spared no pains in providing for a competent inspection. And twenty-four years ago, Matthew Arnold, in speaking of the French system said, "The primary inspectors are the very life of the system; their inspection is a reality." During the last quarter of a century the supervision in France has been greatly improved and strengthened, and it is at the present moment more than ever the "sinews" and life of the system.

The question with us, then, is no longer whether superintendents shall be employed, but how to get the best, how to utilize their abilities, how to organize supervision. I consider the New York plan of supervision an excellent model for a large city. The first talent must be invited to this all important field of activity by rendering the status of the superintendent more desirable. The superintendents of the past have had to do much rough, pioneer work. Their tenure of office was precarious. In too many cases they had to fight for the very existence of the office which they held. My predecessor in Boston was severely crippled in his efforts and finally driven to resign by the bitter and persistent opposition of members of the board bent on abolishing the office. In the earlier days of superintendency many a worthy officer encountered similar opposition. They were baffled, hampered, and humiliated. They had to make bricks without straw. They had to build the walls with the trowel in one hand and the weapon of defence in the other. The tenure of office of superintendents should be rendered more stable. Perhaps it would be well to make their removal depend upon the concurrent action of some superior authority. They should be invested with powers adequate for the accomplishment of the ends in view. Certainly the inducements for men of ability and culture seeking a career of large usefulness to enter this service are far greater than they were two or three decades ago. My opinion is that we have already entered upon a new epoch in this respect. The recent creation of the office of superintendent in Philadelphia and the mode of proceeding in filling it are, in my view, a cheering omen. I am inclined to agree with the eminent pedagogue, Dr. G. Stanley Hall, in the following sentiment expressed by him in a recent able article in the North American Review:

> There is now no line of intellectual work to which a young baccalaureate can devote himself with greater certainty that industry and ability will find their reward in usefulness, reputation, and position than to the professional study of the theory and history and institutions of education.

And what our cities want more than anything else to insure their future educational progress and success, is a full supply of supervising agents who have had the advantages of such a course of training. The men of the future can hardly be expected to excel the men of the past in practical sense, in earnestness of purpose, or in abundance of labor; but they must be men of broader culture, of wider scope of mental vision, of deeper philosophy, and they must be far better equipped with the knowledge of pedagogical science and pedagogical history. Facilities for obtaining the requisite professional knowledge have heretofore been wanting. A capital beginning has been made, however, in supplying the needed facilities by the establishment of chairs of pedagogy in the Johns Hopkins and Michigan Universities and in some other institutions of superior instruction of less prominence.

It is greatly to be desired that similar chairs of pedagogy should be instituted at Harvard, Yale, Columbia, and indeed at all the principal universities throughout the country.

It has been charged that the supervision of the present day is too much occupied with the "perfecting of the machine;" that it magnifies the importance of the mechanical and routine operations [illegible] the school; that it mistakes the means for the ends; that it is too busy about the non-essentials; that it insists too rigidly upon uniformity in methods and results; that it treats pupils en masse and ignores individuality; that its preposterous programs and perpetual examinations are only contrivances for facilitating and enforcing cram, instead of means for promoting profitable culture; and so on to the end of the chapter. That there is a tendency to such faults is, perhaps, true. Some of them may even be quite prominent in certain localities, and others in certain other localities; but sweeping assertions as to the general existence of this array of faults in the supervision, at least to any marked extent, seem to me unjustifiable, and when made they seem to be due either to ignorance or ill intent. But, whatever may be the actual defects in our supervision, the remedy is not to be sought by reckless and indiscriminate criticism, but by the gradual process of training and bringing into the service the most capable and thoroughly equipped superintendents.

I have here a remark to make about the "machinery" of our systems, which of late has been a favorite subject of criticism, especially among amateur educational reformers. They complain that too much attention is paid to the perfecting of what they call the "machine;" that the "machine" is already too perfect; and, in fact, that the perfection of the machinery is its peculiar demerit, and that this excess of perfection is one of the chief evils to be reformed. They tell us, further, that the present and past generations of superintendents, who have worked up this machinery to such a state of perfection, have been for the most part but "hewers of wood and drawers of water;" that the men of the future must ignore this mechanical business and give their attention to what is more intellectual and spiritual. I have no objection to make to the demand that supervision should largely occupy itself with what is intellectual and spiritual. But what I have to say is this: The application of the terms *machine* and *machinery* to a school system has no meaning whatever unless these terms are intended to mean what we commonly designate as organization; and organization is nothing more than a system of arrangements whereby means are adapted to ends for the production of the desired results. This is too plain to be disputed. This being the case, it is obviously quite impossibe to make the so called machine or organization too perfect; for it is certainly impossible to adapt means to ends too well. The plain fact is that the great and undisputed success of our city systems is the result of their good organization. The imperfections in the results (and they are not denied) are due not to the excessive perfection of the organizations, the adaptation of means to ends, but to precisely the opposite cause, namely, the need of still further improvement in these organizations. It is true that organizations can do nothing without the agency of living actors, but in the ultimate analysis there must be organization of action as a means of securing these agents: and the more perfect the organization the more success in securing agents of the right stamp.

I conclude my observations on this topic by a brief reference to some of the characteristics of the policy of two classes of superintendents, the one standing at the top of the roll of honor and the other at the bottom.

The typical superintendent of one of these classes is the true reformer. He regards nothing as done while anything remains to be done; but he never goes to extremes. He believes that wisdom consists largely in moderation, and so his model school is that in which nothing is pushed to excess and nothing is neglected; that in which nothing is overdone and nothing is underdone. He is fruitful in expedients, but not in experiments. He is never content with things as they are, if he can discover a chance for improvement. He has the capacity to profit by the experience of others, and so spares no pains in making himself acquainted with the best things that have been thought and done touching the business in hand. He has the courage of his convictions and holds firmly to what he believes to be good. His aim is to produce better results with each passing day. But while doing his best to administer the system in the most effective and judicious manner he is simultaneously carrying on another work; I mean the development and perfecting of the system itself. With this end in view, he always has some project in hand: the establishment of a training school for teachers, an evening school, or an industrial school; the adoption of a better method of examining and certificating teachers; a plan for aiding and encouraging teachers in self improvement; provision for instruction in sewing; an improvement in the plan of constructing school-houses; the devising of a more rational program and a more rational system of school examinations. In this line of effort he is creating new instrumentalities, each of which, when once put in operation, goes on indefinitely, contributing its addition to the good results of the system as a whole. In this sphere of his labor he incurs risks, for it brings him more or less in conflict with the views of members of his board; but this risk he accepts, trusting to time for his justification.

The typical superintendent of the other class is of a different character. He is considerably in earnest and displays no little activity and industry in supervising and directing the minor details of the business. His supreme ambition is to carry on the routine operations of the system with as little friction as possible, and with this end in view he virtually says to his board, "I am here to obey your instructions. Tell me what to do and I will do it with alacrity and delight." He means well, is fairly intelligent, and has a sincere desire to make himself useful; but he does not possess the qualities of a chief, of a leader, of an organizer. His forte lies in obeying rather than in directing. He performs a good deal of useful drudgery under the direction of the committee. His reports are meagre in valuable information, either statistical or of any other description, about the schools. In place of pertinent facts and suggestions, he substitutes rather commonplace generalities, the correctness of which no one would think of calling in question, winding up with the assurance that, thanks to the wisdom of the board and the faithfulness and ability of the teachers, the schools have made commendable progress and are in better condition than ever before. All are highly gratified to be thus assured and are highly content with their amiable and industrious superintendent.

PROGRAMS.

It is the function of the program to indicate the succession or order of the several studies, to assign each class its group, and to mark definitely the standard to be aimed at in each stage of the course. Some programs indicate the work for each quarter, some for each half year; but, for the most part, they divide the work into stages requiring one year's work each. The program, the methods, the examinations, are interdependent factors in school economy. The examination should aim to conform to the program, while it is, in effect, an authoritative interpretation of the program which the teacher feels bound to accept; moreover, it necessarily influences the method. The program indicates and determines to a greater or less extent the method, while the method must be taken into account in estimating the time to be allowed for any subject. The program is an essential instrumentality in the graded system involving promotion and graduation as the result of test examinations. Only a few years back the program was, in general, nothing more than a list of text books prescribed for each class. At that period systematic examinations were rare; the work in the lower classes was uneven, teachers and pupils being alike slaves to the text book, and the condition was aggravated by the excessive voluminousness of the text book. All that is now changed. But the change has brought along with it a new set of evils. The programs of the present day scarcely refer to any text book whatever. Under the old régime the teacher found it impossible to master the whole text book and was quite at a loss to know what to omit. Under the present régime, where subjects and topics only are named, the teacher is equally puzzled to know what to include. The middle course would seem to be the more judicious and practicable. By the middle course I mean reference, to a considerable extent, to text books as a means of indicating the limitations of the studies, always assuming them to be of the right description. I know of no other practicable means of indicating the necessary limitations in respect to the more substantial branches of instruction. In the attempt to indicate the limitations independently of text books programs have grown out of all proportion. A program from a small western city was found at the Philadelphia Exposition, which was swelled to a good-sized octavo volume. It was, in fact, a series of condensed text books.

A famous school in Paris, with ample means, solves the problem by compiling and publishing its own text books in parts corresponding to each class or grade in the whole course, this series of text books being the program.

That the programs of the present day are greatly overcharged, I have no doubt; but this overcharging, in the immense majority of cases, does not consist in the multiplicity of subjects, or studies properly so called, but in the multiplicity of topics whose limits are not indicated and cannot be indicated without swelling the programs to quasi text books in each branch. As an illustration of my meaning, I insert here in full a program for the first term (first third of the year) for the lowest primary pupils (that is, pupils on their first entrance into school), taken at random, without any attempt to find an extreme case. It is, in fact, the program in a small but important city west of the Mississippi:

Reading.—Use charts of blackboards; words to be first learned, then their phonic elements; lastly building words by sounds. Use both script and printed forms of words, beginning with script. Observe the following order: (1) The idea represented by the word to be learned. (2) The word as a sound and its correct utterance by the pupils. (3) The word as a form: its recognition at sight. In selecting words to be learned, observe the following order: (1) Names of objects. (2) Action words. (3) Qualities. (4) Other words. The names of letters to be learned as fast as introduced in the chart lessons.

Oral reading.— Spell by sounds and by letters all words learned in reading lessons.

Writing, on slates and blackboard, at dictation, words in reading lessons. One side of the slate should be ruled by the teacher. Pupils to use long pencils and to hold them in a proper manner.

Drawing.—Inventive drawing. A few straight lines to be given the children, from which to form such figures as their ingenuity may invent. Also Kindergarten method and Thompson's system.

Numbers.—Clear and ready perceptions of numbers from one to five, to be developed with use of objects. All possible additions, subtractions, multiplications, and divisions of integral numbers to be learned within each limit, as it is reached.

Exercises in rapid reckoning to be given at every step. Also concrete problems. Meaning of + — × ÷. Learn to write these numbers in script, Roman, and Arabic characters. Pupils may learn to count without objects.

Lessons on common things.—(1) Objects in school room: Chair, slate, pencil. (2) Parts of the human body: Head, face, &c. (3) Domestic animals: Dog, cat, &c. (4) Clothing: Hat, bonnet, &c.

Language lessons.—Systematic correction of common faults in speech to be continued throughout the year. Form short sentences, incorporating given words. Answers to be given in full sentences. The use of the period to be taught; also, the use of capitals at the beginning of sentences.

Vocal music.—Singing simple songs. For scientific instruction, see Blackman's Graded Songs.

Morals and manners.—Inculcate reverence and love for God, obedience to parents and teachers, and a kind and forgiving spirit towards brothers, sisters, and schoolmates. Guard against rudeness and suppress profanity and the use of vulgar language.

Physical exercises.—Free gymnastics, a few minutes every hour, or as often as the pupils become weary of other employment. Vocal gymnastics. Require the pupils to sit and stand erect.

The author of the above seems not to have been influenced by the maxim "Too many things at once is no better than too much of one thing."

The New York requirements for the first stage, that is, first half year, are far more moderate and rational:

FIRST HALF YEAR.

Reading and spelling.—Familiar words and simple sentences from blackboard and chart; also, spelling such words from dictation. Exercises in elementary vowel sounds and in consonant sounds in combination with vowels.

Number.—Counting and adding by ones to 100, by twos and threes to 50; also, counting backward by ones from 10; *Arabic figures* to be read to 100 and written to 20.

Object lessons.—Form, such as square, oblong, circle, cube, ball, or sphere; straight and curved lines; common colors; and the obvious parts and uses of familiar objects.

Drawing, on the slate, taught from dictation illustrated on the blackboard, from dictation without illustration, and from copy.

Position and inclination of straight lines, triangles, letters.

Straight lines: Vertical, horizontal, and oblique. Angles: Right, acute, and obtuse. Letters of the alphabet which can be formed from straight lines. The triangles named from their angles: Right, acute, and obtuse. Common objects represented by straight lines without perspective effect.

The following are the general requirements applicable to all the classes of the primary school, and, of course, forming a part of the program for the sixth class:

Vocal music.—Instruction in vocal music shall be given to the pupils in every grade. The music used shall be such as is found in the books contained in the supply list of the board of education.

Physical training.—The pupils should be exercised daily in such a manner as to expand the lungs, develop the muscles, and impart an easy and graceful carriage to the body. Calisthenic exercises should be employed for the attainment of these objects.

Manners and morals.— Such instruction should be given daily to the pupils of all the grades as will foster a spirit of kindness and courtesy toward each other, a feeling of respect toward parent and teacher, and a love of cleanliness, order, law, and truth.

The absence of uniformity of text books in New York renders it impracticable to refer to particular text books in the program, while, on the other hand, the system of examination described under the head "school examinations" greatly diminishes the necessity for such reference, as it is calculated to afford every teacher the needed interpretation of the program.

For the sake of comparison, it may be well to introduce in connection with the above specimens of the present day a representative one of an earlier date. About thirty years ago the Boston primary school system was reorganized and a new program adopted, from which the following is quoted:

FIRST HALF YEAR.

My Little Primer or My First School Book, at the discretion of the teacher. (1) Pronouncing words without spelling; (2) pronouncing and spelling combined; (3) spelling without book words that have become familiar; (4) counting from one to one hundred; (5) drawing on the slate or blackboard, imitating some mark, letter, or other object, or copying from a card.

My First School Book was a small child's first book, combining reading and spelling lessons. Only a beginning of this book was to be made the first six months, being continued another whole year as the only reading book and a year and a half longer as the only spelling book. As meagre as this program was, it was seldom accomplished in the specified time, owing to the imperfection of methods and classification.

The limits of space will not permit the introduction here of an average program of the elementary course in its entirety; but, as it was deemed necessary for illustration to present samples of programs for the first or lowest stage of the primary grade, room must be taken for specimens designed for the highest grammar grade. The first specimen presented is from the Philadelphia program for the year 1882. This can hardly be regarded, however, as an average specimen. It appears to me to belong to the more extreme class, both in respect to the range of studies and to the requirements under each.[1] The program from which this is taken antedates the creation of office of superintendent of schools in Philadelphia.

FOURTEENTH GRADE (SECTION A)—TIME, 10 MONTHS.

LANGUAGE.

Reading and elocution.—Vocal culture; declamation; recitations and dialogues; explanations and drill exercises.

Spelling.—(1) Constant attention to spelling; to accent and pronunciation; to marks; to rules for spelling; to dictation exercises. (2) Classes of words, as simple and compound; primitive and derivative; monosyllables, dissyllables, trisyllables, polysyllables, syllabication.

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[1] This course of study has very recently been materially modified at the instance of the city superintendent, Mr. MacAlister.

Definitions and etymology.—(1) The meanings and the uses of words generally explained and illustrated; the dictionary. (2) The etymology or derivation of words generally; their literal and their accepted meanings compared; their analysis; attention to words of historic importance or nature; formation of words from given roots.

Language lessons.— General review of important definitions and principles. (1) Further explanation of the subjunctive and its proper use; the progressive form; idiomatic uses of the verbs, modes, tenses, pronouns; correction of false syntax; parsing; sentence making. (2) Classes of sentences, clauses, and phrases carefully reviewed; qualifiers of subject and predicate further explained; analysis and construction of sentences. (3) Compositions, letter writing, abstracts from reading and other lessons; transposition from poetry to prose; important general principles and rules for punctuation.

English literature.—For pupils of senior department for girls. Literature; prose and poetry; kinds of each; different periods of literature of England; of literature of America; brief historical sketch.

Brief biographical sketch of the following authors, their important works, nature of their writings, extracts, analysis, and criticism: English: Chaucer, Spenser, Shakespeare, Milton, Dryden, Pope, Addison, Goldsmith, Johnson, Byron, Wordsworth, Scott, Tennyson, Macaulay, and Dickens. American: Edwards, Franklin, Jefferson, Bryant, Longfellow, Whittier, Lowell, Holmes, Irving, Prescott, Bancroft, Motley, Cooper, Hawthorne, Webster, Emerson, and Agassiz. Other authors, so far as time may permit.

MATHEMATICS.

General review of important terms, principles, and methods.

Mental and written arithmetic.— Continued applications of percentage in partial payments, taxes, duties, or customs, exchange, average of payments, partnership, analysis, metric system, business calculations.

Geometry and mensuration.— Terms and definitions; plane geometry of lines, angles, triangles, quadrilaterals; proportion, and proportion applied to plane figures. Terms and definitions in mensuration; problems to find solidity, surface, and the several dimensions of the rectangular solids, the pyramid, the sphere, and the cone; general principles of geometry involved, and construction of necessary figures.

Algebra.—Terms, definitions, and principles; simple equations involving two or more unknown quantities of the first degree, quadratics, proportions and progressions, involution, evolution, surds.

WRITING AND DRAWING.

Writing.— Charts; formation and analysis of letters; copy book.

Book-keeping and business forms, &c.

Drawing.—(1) Plane geometric drawing with instruments continued; simple applications of geometrical problems in construction and decoration, using for design simple conventional details of plant forms; two original designs. (2) Historic ornament; rectangular and cylindrical solid objects from copies; dictation and memory exercises.

GEOGRAPHY AND HISTORY.

Physical geography.—(1) The earth as a globe: its form and dimensions; the (probable) condition of its interior; its surface (as land, water, atmosphere). (2) The earth as a planet: Form; rotation and its effects; revolution and its effects (theory of seasons); imaginary circles; maps and map projections. (3) The natural divisions of the earth: (*a*) Land, including continents, islands, peninsulas, capes, mountains, table lands, plains; (*b*) water, including oceans, seas, gulfs or bays, straits, lakes, and rivers. (4) Land: The structure of the land; the interior and the crust of the earth; general idea of minerals, rocks (classes of rocks), and fossils in the earth's crust; general geological history of the earth's crust; some changes now in progress; volcanoes and earthquakes (brief theory and distribution). Relief forms: (*a*) of the earth, mountains, table lands or plateaus, plains, steppes, and prairies; (*b*) of each grand division, North America, South America, Europe, Asia, Africa, Australia; (*c*) of the United States. Islands: (*a*) Continental, with theory of their origin, and principal chains; (*b*) oceanic, including volcanic islands and coral islands (with their classes); their distribution. (5) Water: The geological distribution of the ocean, with its great subdivisions; lakes; drainage (continental or steppe and oceanic), with examples. Ocean movements: Waves; tides, some theory of their cause or origin; currents, some theory of their origin, and their uses. (6) Atmosphere: The constituent parts, temperature, evaporation, winds, with some theory of their origin; of constant winds, trade winds, land and sea breezes. (7) Climate: Modifying causes; isothermal and snow lines; climate zones; vegetation (very brief), showing productions of different climates and how these productions affect human industries; animals (very brief), showing characteristics of different zones and continents; man (very brief), showing different races, their proportion, leading characteristics and distribution.

General history.—(1) History of nations of remote antiquity as reading lessons; attention to history of Babylon, Assyria, Egypt, Persia. Greece: History of Greece as reading lessons; attention to Argonautic expedition, Trojan war, wars with minor nations; laws of Lycurgus, Draco, Solon; the Persian invasions, Peloponnesian wars, sacred war, Macedonian Empire established, career of Alexander the Great, Achæan League, surrender of Corinth. (2) Rome: History of Rome as reading lessons; attention to the founding of Rome, the kingdom of Rome, government by consuls, by tribunes, and by decemvirs, plebeian and patrician contests, wars with surrounding nations; the Punic wars, the three triumvirates, wars with neighboring states, the civil wars between Marius and Sulla, Cæsar and Pompey, Octavius and Antony, the republic and the empire established, separation into Eastern and Western Empire, fall of Western Empire (476), and conquest of Eastern Empire (1453). The cause and the result of the conquest of the Eastern Roman Empire, with date. (3) The Dark Age, the feudal system, the crusades, and Central and Southern Europe during the Middle Ages, as reading lessons. (4) Germany: The Hanseatic League, the Reformation, the Thirty Years' War, the Seven Years' War, Napoleon's Wars, War with Austria (1866), and War with France (1870), with dates. Prussia: The reign of Frederick the Great, Napoleon's Wars, the partitions of Poland, and the Empire of Germany (1866), with dates. Austria: Rudolph I (Hapsburg), the partitions of Poland, a separate empire (1806), Napoleon's Wars, and Wars with Prussia and Italy, with dates. Russia: Peter the Great, Catherine II, the partitions of Poland, Napoleon's Wars, and the Crimean war, with dates. Other important events, history of contemporaneous nations, and history of America not connected with history of the United States, to be read.

Constitution of the United States.—(1) Attention to distribution of powers of government among the three departments; the nature of the duties of each department; the qualifications of members of each, the manner of their election or appointment, their terms of service, their privileges, duties, and powers, with text of the Constitution relating thereto. (2) The clauses relating to the powers of the General Government and those reserved to the States; the rights and privileges of citizens; the modes of admitting States, making foreign treaties, making appointments, of passing laws, and of amending the Constitution; the important amendments; to be carefully studied from the text of the Constitution.

MUSIC.

Under general direction of special music teacher.

(1) Music charts and manual; explanations of motive, phrase, and period; movement; accentuation; rhythmical reading of music.

(2) The diatonic minor scale, the natural minor scale, the formation of minor diatonic scales; their keynotes and their signatures.

(3) Further exercises in vocal training; registers or compass of the voices; reading music, naming degrees, and writing notes that indicate tones or degrees sounded; two-part and three-part exercises by note and by words, embracing subjects learned.

OBJECT LESSONS AND ORAL INSTRUCTION.

Anatomy, physiology, and hygiene.—Mainly by charts and lectures. (1) Bones: their form, composition, and uses; joints, how formed, and their uses; spinal column, its formation and peculiarities; teeth, their structure and preservation; broken bones, and how repaired. (2) Muscles and tendons: their formation and their uses; how attached; their contraction and expansion; voluntary and involuntary muscular motion; effects of exercise, of rest; general hygiene. (3) Digestive apparatus: the uses of the teeth; the salivary glands, their position and uses; mastication; the gullet; the stomach, its position, structure, and functions; gastric digestion; brief notice of duodenum, intestines, intestinal digestion, and lacteals; the importance of the liver; effects of chewing too little, of eating too often, too much, or irregularly; dyspepsia; general hygiene; common poisons and their antidotes. (4) Circulatory apparatus: the general relations of the heart, arteries, capillaries, and veins; passage of blood through the heart, arteries, lungs, veins; the pulse, and the rate of pulsation; close connection between the digestive and the circulatory apparatus; quantity of blood in the system; effect of exercise and fresh air on blood and on circulation, of tight garments, of scanty clothing, and of insufficient or improper food; wounds or cut arteries, and what to do; general hygiene. (5) Respiratory apparatus: the lungs, air cells, windpipe, nostrils; the ribs, the diaphragm, their muscles, and their functions; mechanical processes of respiration; the air we breathe, changes in the air from respiration, changes in the blood—arterial and venous blood; close relations between capillaries and air vessels; the capacity of the lungs; effects of tight lacing, of improper position, of impure air, of ventilation; drowning or suffocation, and what to do; the vocal organs, and their functions; general hygiene. (6) The skin: its structure and uses; perspiration and absorption; effect of perspiration; close sympathy of skin with digestive and respiratory organs; of bathing, of proper clothing; scalds and burns, and how to treat them; general hygiene. (7) The nervous system: general nature of the brain and nerves; special senses, touch, taste, smell, the eye (its structure and functions), the ear (its structure and functions); general hygiene.

Natural philosophy.—For pupils in senior department for boys. (1) Matter and its general and specific properties, with examples and illustrations. (2) Attraction: (*a*) cohesion: solids, liquids, gases; (*b*) gravitation: weight, pressure of water, pressure of atmosphere (balances, air pump, pump, barometer); (*c*) capillary: ascent of liquids into tubes (sponge, blotting paper, lamp wick, sap in vegetation). (3) Motion: inertia, force, resistance, action and reaction, centrifugal and centripetal force; with examples and illustrations. (4) Mechanical powers: weight, power, fulcrum; (*a*) the lever and its three kinds (crow bar, pump handle, balance, scissors, nut cracker, wheelbarrow, oars, door, tongs, ladder, muscles of the arm and leg; (*b*) the wheel and axle (windlass, capstan, watch fusee); (*c*) the pulley and movable pulleys; (*d*) the inclined plane, rolling barrels into a wagon, lowering boxes into a cellar; (*e*) the wedge; and (*f*) the screw; general principles and laws; applications in machinery. (5) Heat: (*a*) sources (sun, combustion, friction); (*b*) expansion and contraction of matter (solids, liquids, gases, thermometer); (*c*) change of form (solids into liquids, liquids into gases); (*d*) conduction and radiation (conductors, non-conductors, rays of sun, stoves, clothing); applications (ventilation, wind, evaporation, fog, dew, frost, clouds, rain, hail, snow, ice). (6) Light: (*a*) sources (heavenly bodies, combustion, friction); (*b*) refraction (glass or prism, water, air, the eye); (*c*) reflection (looking-glass, water); (*d*) necessary to growth and health of plants and animals. (7) General principles of vibrations and their applications in sound (the organs of hearing), and of electricity.

The program copied above is for the eighth year of the course, pupils being admitted to the lowest grade at the age of six. The program for this eighth year, together with that of the preceding year, is called the senior department. Examination for admission to the high schools is not based on the requirements of the eighth year grade, but on the requirements of the twelfth grade; that is, the last half of the sixth year. The classes in the senior department are taught exclusively by the principals.

The program for the first class in the grammar schools of Boston—that is, the highest class—forty years ago, at the time when the first written examination was applied, was as follows:

GRAMMAR SCHOOL, HIGHEST CLASS.

Emerson's National Spelling Book; Goold Brown's First Lines of English Grammar; Olmstead's Rudiments of Natural Philosophy and Astronomy, or Parker's Compendium of Natural and Experimental Philosophy, stereotyped edition; Woodbridge's Geography and Atlas; Pierpont's American First Class Book; Worcester's Elements of General History; exercises in composition and declamation; writing; penmaking; the North American Arithmetic, Part Third; Robinson's Book-Keeping.

The following studies and books may be introduced, at the discretion of the master: Smellie's Philosophy of Natural History (Ware's edition); Goold Brown's Institutes of English Grammar; Whately's Rhetoric; Parker's Exercises in English Composition. Pupils who shall have nearly completed the course of exercises in arithmetic may be instructed in algebra and geometry. Text books, Bailey's First Lessons in Algebra and Tillinghast's Plane Geometry.

The critics of the schools at that period found fault with the schools for not doing enough. It was charged that many teachers were inefficient and that the general results of the instruction imparted were unsatisfactory. Hence a written examination was instituted to ascertain the comparative standing of the first classes in the respective grammar schools in the different branches taught. Up to this time pen and pencil were very little used by the pupils in the processes of instruction employed. To ascertain the result in spelling and punctuation the errors in all the exercises were marked.

For the questions used in this examination, see Appendix C. These questions indicate the committee's idea of what it was reasonable to expect.

In respect to the order of the studies and topics and the grouping of them in the respective grades or classes, there are found diversities difficult to account for. For example, in the Philadelphia program copied above, the formation and analysis of script letters is a requirement of the highest class of the grammar grade, while in St. Louis, the pupils in the very first quarter of their schooling—that is, in the lowest primary grade—are required to do substantially the same thing, namely, to write the separate elements, or principles, of which letters are composed, and to form a considerable number of the letters of the alphabet by the synthesis of these elements. There seems to be no generally accepted rule as to the proper place of the spelling book in the course. In some programs it finds a place in the early stages; in others it appears only in the uppermost classes. A very great proportion of programs would be improved, as it seems to me, by simplification, that is, by reducing the number of matters requiring attention through the same day, the same week, or the same month. Why should scholars be kept on arithmetic every day for six or eight years? And why not let up occasionally on other studies, such as geography, or reading, or writing, or spelling? What are called language exercises have more recently become almost an intolerable incubus on the program. Much valuable time is wasted on premature requirements in this department. It would be unjust not to acknowledge that much excellent work has been done in program making. A good program for one city would be, in its substance, if not in all details, a good program for every other city. Why, then, should the school authorities of each city think it necessary to construct their own programs? Why not openly adopt such as have been framed by the most capable and the most eminent experts? It is impossible for a young and inexperiencd superintendent to contrive a good program unaided, for to forge out a good program is, perhaps, the most difficult of pedagogical tasks.

SUPPLEMENTARY READING.

In the early history of our school system there were no such books as school readers, the New Testament, the Bible, and the Psalter being the only books for reading used in school. The publication of a good selection in prose and poetry from various authors, for the exercise of pupils in the art of reading, was an important step of progress. The pioneers in this improvement were Noah Webster, Lindley Murray, and Caleb Bingham, the last a Boston schoolmaster, who, taking advantage of the dearth of school books and of reading books in particular, at the revival of common schools which followed the war of Independence, divided the country among them.

Webster's Third Part and Bingham's American Preceptor held their ground as the principal readers for a quarter of a century. The Pierpont series, the next great step of progress in this direction, were the leading readers for another quarter of a century. And the highest book in this series, the American First Class Book, as originally published in 1823, was a production of surpassing merit. It instituted a standard both in respect to choice and arrangement of material which subsequent compilers have found it no easy task to excel.

But the good readers of all grades, from the child's primer to the first class reader and speaker, which have been compiled and published during the last fifty years for use in our schools, are very numerous. Recent compilers have a great advantage over their predecessors of the time of Pierpont, inasmuch as they have a vastly richer storehouse from which to draw. But it is more than doubtful whether this advantage has been fully utilized. In these latter days the tendency has been to grade down the selections to too low a standard, especially in the lower grades of readers, and to give too much space to pieces which possess hardly any other merit than that of being easily comprehended. The true function of a reader is not merely to serve as an instrument for teaching the child to call words at sight or as a manual of exercises in pauses, inflection, and emphasis, but it should also be a golden treasury of wisdom, of information, of "thoughts that breathe and words that burn," of the noblest sentiments "married to immortal verse."

The school reader, according to its grade, should comprise the pieces best calculated to develop the sentiment of the true, the good, and the beautiful. It should be the child's classic. Every piece within its covers should be a gem of poetry or of artistic prose worth committing to memory. The child could not become too familiar with such a reader. Proper instruction in the ideal reader—drilling upon it till its substance of thought becomes worked into the very fibre of the child's mind and the physiognomy of every word becomes familiar to his eye—would far surpass in value that in any other branch of instruction included in the school curriculum.

Recently the plan of supplementing the readers by the introduction of other reading matter has come into vogue quite extensively. With a view to meet the demand for this supplementary reading, a good many books have been compiled and published. Besides books designed for this purpose, juvenile periodicals and newspapers, and sometimes a second series of readers, have been introduced; and, finally, biographies, histories, and works of fiction have been more or less used for supplementary reading.

Some of the advocates of this plan have put forth most extravagant claims in its favor. Compilers and publishers naturally did what they could to sound its praises, as it could not fail to put money into their pockets.

In a short time this supplementary reading business was in some quarters greatly overdone. Fortunately, a reaction has set in, and much of this supplementary rubbish is finding its way to the junkshop, while the regular readers are again coming to the front in the school room.

If the readers were what they should be in respect to quantity and quality of matter and if such readers were properly handled by the teachers, the need of supplementary reading would be reduced to such a minimum as to be scarcely perceptible.[1] Almost the only thing needed in this line would be an occasional number of a good newspaper; and the use of the newspaper in the school should be restricted to the more judicious and capable teachers in the upper grades. I do not fear to lay it down as a rule that where instruction in reading is unsatisfactory the true remedy does not consist in furnishing supplementary reading, but in changing the reader or the teacher or both.

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[1] No additional reading matter has been introduced in the recitations, it being the theory in our schools that more real progress is made by thoroughly mastering a few lessons than by superficially reading many.—(St. Louis Report for 1880-'81, by Mr. Edw. H. Long, superintendent.)

Improvement in reading is not to be sought, then, through the use of miscellaneous extraneous reading matter, but through the making and the skilful use of good reading books—books to be read all through, from the first page to the last, and read until every piece becomes familiar, not merely tasted or swallowed, but chewed and digested. Such readers, so used, become the veritable humanities of the elementary school, as well as the best instrumentalities for teaching reading in the proper acceptation of the word.

INDUSTRIAL EDUCATION.

It may be well, in the first place, to define what is meant here by the term industrial education, which is used rather loosely in the current discussions on the subject. Some writers use it in the same sense as technical education; better usage makes a distinction, however. J. Scott Russell, in his masterly book Systematic Technical Education for the English People, gives to technical education a broader meaning than that which belongs to industrial education, making it include all that education which teaches the knowledge required to fit men for some special mode of gaining their livelihood, and thus embracing the instruction of the highest professional schools, as well as that given in schools designed to form the handicraftsmen of the humblest degree. Non-technical or general education, on the other hand, is that which has for its object to train and send into the world able men of matured intelligence and ripened powers, good for all the vocations of life and prepared to enter upon its duties with sound bodies, developed ability, and formed character; but it is not designed to communicate that special knowledge or to develop that special skill which fits a man for the particular calling or profession which he will have to choose as his life work. This general education is the necessary basis of efficient technical education. Large education, broad development, a generous general training, are the best possible foundations of useful after life, but they are only the foundations of the knowledge and skill requisite for professions and trades. This knowledge and skill it is the function of technical education to impart; it gives that special training which renders the educated man both self supporting and directly useful to society. I willingly adopt the signification given to technical education by so eminent an authority, although my choice would be to call all that education which is not general professional, after the nomenclature of the French pedagogy.

Technical education in this comprehensive sense is composed of two tolerably well defined divisions, the one being that which is concerned with the social professions and those relating to the fine arts, while all other occupations and pursuits requiring the application of science, art, and manual skill are included in the other division. This province of technical education is what we mean by industrial education, which has for its scope to impart the knowledge and skill requisite for success in the three great departments of practical life, namely, agriculture, manufactures, and commerce, or, in other words, in producing the raw material from the ocean, the mines, the forest, and the field, in converting these materials into useful forms, and in their transportation and exchange.

In its widest sense, industrial education comprises not only all that a man does for himself, but also what is done for him by others to bring him nearer to perfection as a worker in any branch of industry.

In a more limited sense, industrial education is that which is designed to impart the knowledge and skill requisite as a preparation for successful work in that department of practical activity which is concerned in changing the raw material into useful forms, or the manufacturing industry.

In former times, knowledge and skill in industrial pursuits were almost exclusively acquired by means of apprenticeship. This held true not only of the mechanical trades, but of the liberal professions as well.

That state of things has passed away. An auxiliary instrumentality has been created by the demands to advance civilization; that instrumentality is the technical school, in its elementary, secondary, and superior grades and in its ever increasing diversity of aim and purpose. Industries made but comparatively slow progress while they were carried on by persons whose instruction was limited to apprenticeship. Gradually, and in more recent times, the idea has made its way that the progress of an industry depends especially upon the degree of instruction of those who exercise it. This led to the establishment of industrial schools. The competition of industries is rapidly multiplying these schools, and, from present indications, these schools are destined to a development far beyond that as yet attained in the most advanced community. Industrial education is of two kinds: first, that which consists in imparting a theoretical knowledge and the applications of science and the principles and rules of the useful arts, such as may be given in the class room and laboratory by the teacher and professor; second, that which consists in imparting the manual skill and the applications of science and the rules of the arts necessary to form the handicraftsman of whatever grade. This is the education of the shop. The school for imparting this branch of industrial education is therefore primarily and essentially a workshop, supplemented to some extent with the theoretical training of the school room and the manipulations of the laboratory. The considerations relating to industrial education here submitted must be limited to that portion of it which is imparted in schools, and, moreover, such schools as properly come within the scope of city school systems.

No school question is at present more agitated among us than that of making manual training a branch of instruction in the common school. Some extremists maintain the trades should be taught in the schools in connection with the common branches now required, so that when the scholar graduates he will be prepared to earn his living as an artisan on leaving school. Others more moderate in their views would not undertake to teach trades in school, aiming only to exercise the pupils in the use of the principal tools, in working wood and iron. So far the different theories on the subject have been put into practical application only to a very limited extent. The two important practical questions in this connection which claim our attention are, first, what has been already accomplished in the direction of industrial education in our city school systems? second, what does experience indicate as desirable improvements to be undertaken in the department of industrial education?

Some account of the progress in industrial drawing is given under the head of evening schools. Sewing is considered so important a branch of instruction for girls that it is considered under its proper head.

HANDICRAFT AS A BRANCH OF PUBLIC INSTRUCTION.

There are two modes of giving instruction in handicraft in schools: First, by annexing the workshop to the school for general education, whether elementary or higher. This mode is sometimes called the putting of the workshop into the school. Second, by establishing technical schools for apprentices, consisting primarily of the requisite shops, with appliances for giving the theoretical instruction applicable to the trade taught. This mode has been denominated the putting of the school into the workshop.

Considering the widespread interest in the question of teaching handicraft as a branch of public instruction, I present here, somewhat in detail, an account of the experiments thus far made in this direction, of which I have been able to obtain information.

Gloucester, *Mass.*—Population, census of 1880, 19,329; chief industry, ocean fishing. The money for the experiment was placed at the disposal of the school committee of Gloucester, in 1878, by Miss Marian Hovey, one of the trustees of the estate of George O. Hovey, a former summer resident, deceased. In pursuance of the object of this gift, provision was made for the instruction, on Saturdays, of four classes of boys, of twelve members each, from the two upper classes of the grammar schools in the handling of some of the principal tools used in carpentry. A practical carpenter was employed as teacher.

For the accommodation of these classes a room of moderate size was fitted up with twelve benches, and, in addition to the vise and bench hub, each bench was furnished with the following tools: A rule, try square, hammer, jack plane, jointer, smoothing plane, bit stock, bit, mortise gauge, mallet, ½-inch mortising chisel, 1¼-inch paring chisel, chalk reel, rip saw, panel saw, screw driver, brad awl, oil can, oil stone, and bench hook.

The course was arranged for forty lessons, the length of each lesson being equivalent to the half of a half-day session. The pupils were assigned benches and those using the same tools in succession were held responsible throughout the whole course for keeping the tools in good order, for using them carefully, and for returning them to their proper places at the close of each lesson.

The attendance was entirely optional, but the pupils were required to be as attentive, industrious, and orderly as during any portion of their school work. As the novelty wore off it was found that the attendance gradually diminished. The committee, therefore, in 1880, changed the arrangements so as to relieve the pupils wishing to take the instruction in carpentry from sacrificing therefor a part of their holiday, by permitting the pupils in carpentry to take lessons during school hours on the afternoons of Monday, Tuesday, Thursday, and Friday of each week, two classes being instructed each afternoon. By this change regularity and punctuality in attendance were secured, and from a membership in the carpentry class of thirty pupils there was an immediate advance to the number of ninety-six (being one-half of the number of pupils in the two upper classes in the two principal grammar schools) in eight classes, each receiving instruction one hour, the time of one-half of the afternoon session. Six girls accepted an invitation to take the first course with the boys. Under the subsequent arrangement as to time, two classes and a part of a third were composed of girls.[1] In regard to their work the superintendent remarks: "The work of the girls is equally as good as that of the boys and they seem to enjoy it heartily." The name and manipulation of each tool were taught successively in connection with the operations performed upon the stock, consisting solely of pieces of pine board, both milled and rough.

These operations were reviewed and synthesized near the end of the course in eight lessons, in constructing from rough boards a box 2 feet long, 1 foot wide, and 8 inches high, the cover being hung with butts and fastened by a lock; the last two lessons were devoted to preparing and sharpening tools. The amount of material used by each pupil was about 25 square feet of boards varying from seven-eighths to an inch and a quarter in thickness. The superintendent estimates the cost of this kind of instruction as follows:

> A room similar to the one at Gloucester can be fitted up for a carpentry class at an expense not exceeding $500. In such a shop, thoroughly and completely equipped for the purpose, one teacher can instruct four classes each day—twenty classes each (school) week—and do his work efficiently. Sixteen members may be permitted to attend each class without detriment to the progress of individual pupils. Allowing forty weeks for the academic year and making the salary of the teacher $20 per week, the annual cost of instruction would be $800. The expense of stock would not exceed 50 cents per annum for each pupil. Upon this basis the per capita expense of instructing three hundred and twenty pupils would be about $3 a year.

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[1] In this city girls were not taught sewing.

The amount actually paid from Mr. Hovey's estate to defray the expenses of this manual training school during its continuance of about eighteen months was $742.51. It was discontinued July 1, 1880, because the city government refused to make an appropriation therefor and Miss Hovey was unwilling to make any further contribution for the purpose.

Superintendent Marvel, in referring to the experiment in his report, remarks as to its results as follows:

> This attempt to combine intellectual and manual training will tend to dignify manual labor in the opinion of many young people just at that critical period when so many are now wasting opportunities for practical education in a vain endeavor to accomplish purely intellectual work for which they are totally unfitted. Recognition in the public schools that mechanical occupations are equally as important as the professions or as mercantile pursuits, and that the scheme of public instruction is broad enough to afford an education adapted to the needs of all classes of citizens, cannot fail to leave a marked effect upon the succeeding generation. Boys and girls will deem it no less honorable to be found in the fields and workshops than in stores and offices, so long as they are engaged in legitimate and honorable occupations.

Boston, Mass.—Here the experiment was made in consequence of an offer by the Boston Industrial School Association. It was limited to one school, the Dwight grammar school for boys, in charge of Mr. James A. Page as master, containing about 625 pupils, 135 being fourteen years of age and upwards. The proportion of pupils coming from well-to-do families is much above the average of the grammar schools of the city. One of the school rooms of the building, 27 by 27 feet, was used for the shop, which was furnished with three long benches, each accommodating six pupils and eighteen sets of the principal tools used in carpentry. A practical carpenter was employed as instructor. Two classes of eighteen members each were selected for the shop instruction. One of these classes was drawn from the upper or graduating class, nearly all the members of which offered themselves as candidates; and in order to give the experiment a more practical application to the average material of grammar schools, the other class was taken from the second, third, and fourth classes, there being six classes or grades in the school. Many of these latter had already handled tools to a certain extent, either at home or in their fathers' workshops. Among the boys selected there were those both of American parentage and foreign; some were among the oldest and largest in their respective classes and some among the youngest and smallest. The conditions of admission to the shop work were that the candidates must be tall enough to work at the benches, strong enough to handle the tools, and studious enough to maintain their rank in their regular school studies. The course of instruction was arranged in eighteen progressive lessons, which were given on Mondays and Thursdays from 2 to 4 o'clock. The lessons commenced in January, 1882, and ended in the following May. Each class received practically one lesson of two hours each week, eighteen in all. The program was fully written out on the blackboard. School discipline was maintained during shop work and each boy was marked for his work at the end of the lesson, the marks being preserved. The lessons of the classes from which the shop boys were drawn were so arranged that drawing and writing should come on the afternoons of their absence, as these lessons were comparatively easy to make up. The total cost of the lessons was $711.95, room rent and heating not being reckoned. The cost of tuition alone was $175, the cost of material was about $20, and the cost of sundries the same, making the cost per pupil for these three items about $6. In reporting the experiments to the school board the master says:

> The order was good and the pupils interested. It was delightful to see the eager desire manifested everywhere in the room to do the day's work well. There was no absence, no tardiness. * * * I consider that the results go far to prove that manual training is so great a relief to the iteration of school work that it is a positive benefit rather than a detriment to the course in the other studies.

In another connection Mr. Page said:

> I have no doubt that there was a great benefit to these boys in what they learned about tools and their use, and that it will go with them through life; in fact some of them have told me that they now have a set of tools and do all the little odd jobs about the house. * * * The chief good we look for, however, is in the effect on the general training. "The hand for the sake of the brain."

Although these two experiments were interesting and well managed, it would, perhaps, be difficult to say what they proved that was not already admitted or what material question they settled. That boys of the proper age should be pleased with hand work of such a nature and performed under such circumstances, that they should succeed well in such simple manipulations and derive therefrom a certain degree of useful information and training, were results which any one tolerably well versed in boy nature would naturally expect. The question at issue is not whether a certain percentage of boys in grammar schools like and can successfully perform certain operations upon wood with carpenters' tools. This may be easily granted. The real question is whether it is best to put the shop into the grammar school for the instruction of boys in handicraft, either as a means of promoting intellectual education or as a substitute in part or in full for apprenticeship to a trade.

The second experiment in Boston.—The superintendent of the public schools of Boston, Prof. Edwin P. Seaver, in discussing this subject in his third annual report, 1883, says:

> Even if the purpose for which these schools [grammar schools] exist—elementary general education—admitted the introduction of shop work (which in my judgment it does not), yet the great expense of providing many separate schools with shops, tools, and machinery would make the thing altogether impracticable. Moreover, it should be borne in mind that shop work is not suited to the strength and stature of boys under fourteen years of age; and four-fifths of the boys now in the grammar schools are under that age.

Discarding, therefore, the idea of introducing mechanical education into the grammar schools, he advises as a substitute the establishment of a special manual training school, as follows:

> The best provision, therefore, would be to establish at some central point in the city one manual training school, to equip this school thoroughly for its work, and to admit to it, under suitable restrictions, boys from all parts of the city. A single school, large enough to accommodate two or three hundred pupils, would be the most economical provision that could be made. By changing the classes in accordance with a properly arranged time table, the shops and tools would be in use all the time, and the instructors, both in shop work and in ordinary school work, would be constantly occupied. In this school the boys should continue their ordinary school work about two hours a day, attend to drawing one hour, and work in the shops two hours more. If the course were made three years long, the intellectual work would cover the upper part of the grammar school course (or the most essential studies in it), together with some parts of the high school course. The manual training could be brought up to the point of enabling pupils, on leaving school, to enter many manual employments with advantage to themselves, and therefore to the community. Not that the school would or could teach any single trade as would be done in an apprentice school, but its pupils would be so well grounded in the general principles of many trades that the specialties of each trade would be very quickly learned. The experience of the St. Louis school, as well as that of other similar institutions, leaves little doubt on this point.

The special committee of the school board appointed to report on the subject recommended as an experiment the organization of an elementary manual training school, at a central point, for the instruction in carpentry of boys in the grammar schools over fourteen years of age. The members of this school are to receive one lesson of two hours each week, and for this purpose are to be excused from attendance at their respective schools one-half day each week. The city council has appropriated $2,500 for the equipment and maintenance of this manual training school, which is to be opened in the basement of the Latin School building, with a course of instruction similar to that of the Dwight School experiment. This scheme is evidently not in accordance with the recommendation of the superintendent, who says expressly that the purpose of the elementary school does not, in his judgment, admit the introduction of shop work, and he therefore recommends the establishment of a manual training school, with a course of study of its own, in accordance with the generally accepted theory that technical education should come after and be based on general education.

The school board, however, did not act in accordance with these judicious views.

The plan recommended by the committee, both in principle and effect, is the same thing as the placing of the shop in the elementary school, although this committee did not recommend this plan as their first choice, but as a makeshift, hoping for better things in the future. As to their preference they say:

> Past experience has shown that it is useless to ask for the appropriation of a sum of money sufficient for the establishment of a separate and fully equipped industrial school, where instruction and practice in the use of tools could be combined with mathematics, drawing, and the English branches of a high school course.

Hence the above plan, involving a comparatively small expense, was recommended.

Such is the poor, pinched, and scanty outcome of the agitation and discussion of the subject of establishing industrial schools for fifteen years, which was inaugurated by the report of the superintendent in 1869, in which he says:

> Many thoughtful and philanthropic persons in the community are beginning to feel that we are concentrating our efforts too exclusively upon intellectual instruction. It is thought that the tendency of the schools is to give the pupils a distaste for manual occupations; that they are too much stimulated to persevere in their school studies by fallacious hopes of obtaining a livelihood in occupations which do not require manual labor. To counteract this tendency and at the same time to supply the existing demand for skilled labor, the project has been suggested of establishing one or more special schools in which boys and girls might be taught various trades in connection with the ordinary branches of elementary education. How far such schools would be practicable I am not prepared to express an opinion; but I am in favor of adapting all our educational systems and institutions to the actual wants of the community, and it strikes me that this question of industrial schools is at least worthy of careful investigation.

In the discussion which followed the above suggestions, it was ascertained that the city had no legal authority for establishing industrial schools. Authority, however, was granted in the following public act, which was secured for the purpose in 1872:

> A town may establish and maintain one or more industrial schools, which shall be under the superintendence of the school committee, who shall employ the teachers, prescribe the arts, trades, and occupations to be taught therein, and have the general control and management thereof; but they shall not expend for any such school an amount exceeding the appropriations specifically made therefor, and shall not compel any scholar to study any trade, art, or occupation without the consent of his parent or guardian; and attendance upon such school shall not take the place of the attendance upon public schools required by law.

It will be observed in the last clause of this act the legislature carefully guarded from encroachment upon the general education prescribed for the public elementary schools.

Peru, Ill.—The next place after Boston in the order of time to repeat the Gloucester experiment was this western town, with a population of 4,632, but with somewhat better shop accommodations. This experiment is still in progress. The shop is a room 30 by 50 feet, in the basement of a new brick school, lighted by eight windows on three sides. This room is fitted up with ten double benches for the accommodation of twenty pupils. The tools furnished and the program and method of instruction are essentially the same as those of Gloucester and Boston, already described. Two classes of twenty pupils each are taught for forty minutes each day and half a day on Saturdays. These classes are taken one from the second grammar school and the other from the first grammar and high schools, but from the last school only the younger boys are taken. The ages of the boys in these classes range from eleven to fifteen years. The daily performance of each boy is marked as it would be in any other branch of instruction. Entrance into these classes is wholly voluntary on the part of the pupils. While the boys are in the workshop the girls of the same class are engaged in sewing.

Moline, Ill.—In this town, containing a population of 7,800, no provision for special instruction in shop work was made, the principal feature of the plan of industrial education here on trial consisting of an exhibit of pupils' drawings and mechanical productions. The exhibition took place in the rink, March 29, 1884.

Suspended from wires or spread upon tables were upward of three hundred articles of fancy work of all descriptions, combining the ornamental and the useful in varying proportions: fifty or more examples of plain sewing; on a table by itself, 60 loaves of bread, with cakes and pies. This was the work of the girls, principally. The boys contributed 31 toys, 30 models, 27 examples of wood carving, and 60 articles of every day usefulness. These together make a total of over 600 articles for home use and ornament, and mainly the work of youngsters from six to fourteen, the number above that age being quite small. In addition to the large showing of industrial work, there were exhibited on the wall in groups a large number of pencil drawings, each group being arranged about the large pattern set by the teacher.

Nearly fifty prizes were awarded, ranging from one dollar to five, and twenty-three honorable mentions.

The scheme[1] for the coming exhibition is given as follows:

Class A: Models of machines, implements, or other mechanical contrivances.

Class B: Articles, other than models, the value of which shall depend upon their utility.

Class C: Articles the chief value of which shall depend upon the artistic skill displayed in their production.

Class D: Drawing (open to pupils of all ages): (1) Freehand copy, without measurements, of an outline drawing placed before the pupil; (2) original design in black and white for wall paper, carpet, oil cloth, centre piece, or border, &c., the conventionalized unit or units to be furnished pupils.

Class E: Special prizes (open to pupils of all ages): (1) Wood carving; (2) loaf of bread; (3) plain hand sewing.

Class F: Individual art prizes: (1) For best painting or crayon drawing; (2) for best design for frieze, in colors; (3) for best design for centrepiece, in colors.

New Haven, Conn.—An industrial exhibition similar to that at Moline, above described, was held in New Haven, at the Skinner School, April 21, 1884, consisting of articles of wood and iron by the boys, for use and ornament, and plain and ornamental needle work in great variety by the girls, and also articles of cookery: bread, cake, pies, cookies, and puddings. Among the articles produced by the boys were boxes, a bookcase, a wheelbarrow, towel racks, scouring boards, specimens of mortising, single and dovetail joints, &c., and one boy, whose inclination was for iron work, displayed a small engine of his own work, complete. The articles of needlework exhibited by the girls comprised dresses, skirts, aprons, quilts, towels, tidies, worsted afghans, mats, rugs, and mantel lambrequin. The principal contributors in aid of this industrial experiment were Mr. E. M. Reed, General Greely, Mr. H. P. Hubbard, Professor Brewer, Mr. Richard S. Fellows, Judge Robinson, and Mr. Sutton.

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[1] For the scheme in detail, see Appendix D.

In addition to this exhibition an experiment in manual training of the Gloucester type was made, and is thus referred to by Superintendent S. T. Dutton in his report for 1884:

> In each of the Dwight and Skinner Schools a large basement room was fitted up with benches and supplied with tools sufficient for a dozen boys to work at once. Each boy attended twice per week for an hour. At the Dwight School sixty different boys, selected for superior scholarship, received training, and at Skinner about thirty were thus fortunate. Messrs. Judd and Loper, the respective janitors of these schools, gave the needed instruction and did much to make the enterprise a success by their interest and zeal. A thorough course in plain carpentry was given and many useful and ornamental articles were manufactured.

The superintendent, discarding all idea of teaching trades in school, states as follows regarding the disciplinary result of the experiment:

> The principals of both schools are emphatic in saying that the effect was salutary both upon the mental life and manly bearing of the pupils. Several parents testify to the same result and are, without exception, anxious to have such training continued. It is said that those receiving the training, being the older and more influential boys of the school, exhibited a positive interest in their daily work and a propriety of conduct which was helpful in elevating the standard of tone in the whole school.

In view of this result, taken in connection with the practical utility of the facility acquired in the use of tools and considering that this form of education is in the stage of experiment, he suggested the propriety of providing for a still broader application of the plan and recommended therefor the following scheme, which was adopted:

> To let a group of twelve or fifteen boys from each of the grammar schools of the city spend one afternoon a week in the manual training school. The room and appointments at the Dwight and Skinner schools are ample for the purpose, and the plan would simply require that the boys from other schools should travel the longer distance once each week. The groups from the several schools would of course be assigned to the school nearest their own. It could not be asked or expected that the instruction could be given for so small compensation as last year. The janitors should receive from $200 to $300 each in order to enable them to employ extra assistance, which they would be obliged to do. An allowance of $100 should be made for each school for lumber and tools, so that at the outside $800 would cover all expense and fairly compensate the instructors. The legal difficulty, which has hitherto been a convenient bar to such a project, has fortunately been removed. The statute which designated the studies to be taught in the common schools of this State was, at the last session of the legislature, so amended, at the instance of Hon. J. D. Plunkett, as to include "manual arts."

The superintendent writes, under date of November 8, 1884, that there are six classes of boys working two hours per week with carpenters' tools on the plan above outlined.

So far as I have been able to ascertain, these are the only experiments in this direction that have been made in connection with our city elementary public schools.

It is evident that these four experiments, leaving out Moline, are essentially the same in object, plan, and results. The experiment is in substance an addition to the usual curriculum of elementary instruction of shop work of a clean and pleasant variety but requiring considerable muscular force, as a means, not of apprenticeship to a trade, but as a disciplinary instrumentality, to promote the harmonious training and development of the mental, moral, and physical faculties; that is, a gymnastic, an element of general education.

The instruction is given in school time, but attendance on the classes is voluntary. The work is carpentry applied to the manipulations of pine boards, the instruction being given by special teachers. Only the older pupils are admitted to the class. The pupils are uniformly interested in the work, and they acquire considerable facility in using the more common carpenters' tools.

The Tournefort Street School, Paris.—The idea of connecting the workshop with the elementary public school is not a new one; its pros and cons were ably discussed in France a century ago and some attempts were made to put it in practice, though with no permanent result. Recently the experiment has been renewed in Europe under more favorable auspices. The most conspicuous example of the shop in the elementary school in Europe, and the one which for several years past has been most frequently referred to as evidence of the desirableness and practicability of this plan of industrial education, is that of the Tournefort street school, Paris. As the notices of this school which have appeared in our publications have been, so far as I have seen, loose, inaccurate, and incomplete, it seems desirable to state its plan here somewhat fully.

This is an elementary public school for boys, comprising the grades which we denominate primary and grammar, the pupils being expected to complete their course at about thirteen years of age. In 1878 I visited this school in company with the excellent M. Salicis, a professor in the Polytechnic School, who was the chief promoter of the scheme and who has published a vivacious and interesting little book[1] giving a full account of its plan and object, with an expression of his views as to the needs of such instruction in France.

The hand work element or apprenticeship was introduced into it in 1873. For the purpose of this new instruction the school was provided with four additional rooms, one for modelling and carving, one for instruction in what is called technology, one for wood work (furnished with benches and a lathe), and one for iron work (furnished with vises and a forge). The technology room is in reality a class room combined with a museum of raw materials, typical specimens of work representing the general processes of the trades already alluded to, and a variety of tools. Here oral lessons on these matters are given to the mechanical classes by the intuitive method. Boys are not admitted to the mechanical department under eleven years of age. The course is three years. In the first year all the members of the class pursue the same course of manual exercises. Afterwards some optional specialization is allowed.

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[1] L'enseignement primaire et l'apprentissage. Par G. Salicis. Paris, 1878.

The circumstances of this school have been so peculiarily favorable that its plans, management, and results may be fairly assumed to be the best anywhere attainable at the present time. In order, therefore, to render the treatment of this topic sufficiently complete for the object in view, the course of instruction, translated from M. Salicis' book, is here quoted:

> (1) Continuation of the actual school instruction modified; maintenance of the examinations which, by the *satisfecit*, give the right to the certificate of elementary studies [or, as we say, diploma of graduation from the elementary school]. (2) Study and handling of raw material. (3) Drawing from relief, modelling, moulding; carving of soft stone, of marble, and of wood; drawing with pencil and brush (graphique et lavis). (4) Practice with general processes and tools; work at the bench, at the forge, at the lathe, and at the vise; first specialization, when the apprenticeship is established in view of a particular industry. (5) General technological instruction and specialization, at need, of a part of this instruction; book-keeping; industrial and commercial geography; first elements of economy. (6) Drawing with rule and compass of an object made or a simple machine; reducing of a sketch to a given scale; sketch or freehand drawing in just proportion; reciprocally, execution after a drawing made to a given scale, or after a sketch with proportions indicated. (7) Invention; drawing, execution of simple projects. (8) Morality: Duties of men—The child, the man who lives by his labor, the man of means, the man in relation to his fellow beings, the head of the family, the citizen, the country. (9) Habits: Order in person, order in respect to tools, order in work, order in the shop, order in statements, order in the mind, and, consequently, in the conduct.

The school sessions are held every day in the week, except Sunday, beginning at 7 o'clock in the morning and ending at 6 o'clock in the afternoon, with a short recess both forenoon and afternoon, at 11 and 3, a slight luncheon at 4, and an intermission of one hour from 12 to 1 (for dinner and recreation), excepting on Thursdays, when the regular session is only from 2 to 4, the two following hours being either free or devoted to a promenade for instruction. It thus appears that the regular school hours amount to fifty-seven per week. This, it will be seen, is more than double the school time in general in our city schools.

The general instruction of the apprentice classes is the same as that of the upper grades of the other schools, with the addition of the elements of physics, chemistry, and natural history, and of the history of industry. Twenty-four hours a week are given to the industrial instruction. This school did not fall below the others in respect to the number of its graduates. Of the 94 boys who completed the course during the first five years, 5 pursued their studies in high schools, where they held a good rank; 16 engaged in the industry of wood, 20 in the industry of metals, 22 in different industries; 14 in commerce, as clerks or accountants; the remaining 17 not reported.

Of the success of the graduates, the able director of the school, M. Laubier, says:

> Our apprentices, being immediately useful in the shop, are less employed to run of errands, better paid, more permanent. I could cite lads of fifteen years who are receiving two and a half francs and two and three-fourths francs per day and who have not more than six months to serve before receiving pay as workmen.

The late director of the public schools of Paris, M. Gréard, an authority of the first order, thus sums up his judgment of this remarkable experiment:

> In our opinion it would not be without peril to the very foundation of national education to restrict the measure of time allotted elementary studies properly so called. If, at the school in Tournefort street, one has been able to give four hours a day to hand work without inflicting any sensible damage on the general education, the result is due to the special qualifications of a devoted master, who has put his whole heart into the experiment with an élite of pupils, a condition doubly exceptional, upon which it would be rash always to count. But out of the hours of the regular classes, children, boys especially (who are not occupied like girls in the details of domestic life), have leisure which is often an embarrassment to their families and which more often they do not employ for good. It is this leisure which it would suffice to permit to manual labor.[1]

This school appeared to me to be admirably organized and managed in all respects, but my visit left on my mind one impression which has had no little influence in preventing me from recommending the adoption of the plan, namely, the evident inadequacy of most of the boys in point of physical force to the prescribed work. What can the average boy of eleven or twelve, or even thirteen, do with the jack plane, the hand lathe, the forging hammer, and the file? It would be wiser, in our judgment, to postpone these exercises as a rule until boys are fourteen years of age, or thereabouts.

M. Salicis has made no pretence of justifying the hand work of three years in this school as a necessary means of intellectual development in elementary education. The merit he claims for it consists in its value as a preliminary apprenticeship in preparation for the apprenticeship of the shop.

The fact that this school, which is so well known, still remains, after eleven years of existence, the only one of its kind, not only in France but elsewhere, affords strong proof that the plan does not find favor with educational authorities. The best pedagogical opinion is everywhere opposed to the annexing of the shop to the elementary school as a means of training boys as apprentices to a trade or trades. If it is admitted, as we think it must be, that the training of boys in handicraft as a branch of industrial education should be postponed till after the first stage of general education, which is called primary or elementary education, the question arises, What is the most practicable thing to be done in the way of mechanical training for boys who desire it, after completing the common school course?

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[1] Translated from Mémoire sur l'enseignement primaire à Paris et dans le département de la Seine de 1867 à 1877.

The manual training school in connection with the Washington University, St. Louis.—It is thought by some that the manual training school established in connection with the Washington University, St. Louis, affords a solution of the problem of handicraft as a branch of public instruction. The plan of the St. Louis school is original. It is essentially a non-classical high school, with fully equipped shops annexed for work in wood and iron. Candidates for admission must be fourteen years old and pass an examination about equivalent to the requirements of the second class (next to the highest) in a grammar school. The course of instruction covers three years. The daily session begins at 9 A. M. and closes at 3.20 P. M., ample allowance being made for luncheon. Each pupil has three recitations a day, one hour of drawing, and two hours of shop practice. Hand work is divided into four departments, namely: carpentry, wood turning, forging, and machine shop work. "All the shop work is disciplinary;" "special trades are not taught, nor are articles manufactured for sale." It is claimed that, without teaching any one trade, the essential mechanical principles of all are taught. The school was opened September, 1880, and in June, 1883, the first class of 29 young men was graduated. The enrolment in January, 1884, was 196. The school can accommodate a maximum of 240 pupils. As a rule, each shop room has uniform accommodations for a class of 20 pupils, and three such classes can be taught daily in each of these rooms. This school "proposes, by lengthening the usual school day a full hour and by abridging somewhat the number of daily recitations, to find time for drawing and tool work, and thus to secure a more liberal intellectual and physical development—a more symmetrical education. It is believed that, to all students, without regard to plans for the future, the value of the training which can be got in shop work, spending only eight or ten hours per week, is abundantly sufficient to justify the expense of materials, tools, and teachers."

"One great object of the school is to foster a higher appreciation of the value and dignity of intelligent labor and the worth and respectability of laboring men."

"In a manual training school tool work never descends into drudgery. The tasks are not long, nor are they unnecessarily repeated. Whatever may be the social standing or influence of the fathers, the sons go together to the same work and are tested physically, as well as intellectually, by the same standards."

"The grand result will be an increasing interest in manufacturing pursuits, more intelligent mechanics, more successful manufacturers, better lawyers, more skilful physicians, and more useful citizens."

From the above statements of the managers the scope and objects of the school are apparent. It is general in its objects, and not special.

It does not profess to be an apprentice school, nor an industrial school in any sense whatever; it does not offer itself as the best school in which to form the handicraftsman, or the superintendent, or the engineer, or give preparation for college; but it is offered as the best school for the boy above fourteen years of age whose career is yet undetermined by his own choice or the choice of his parents. Perhaps it will be more correct to say that it is offered as a substitute for the non-classical high school, which has its type in a German Realschule and in the Boston English high school.

This interesting and novel school seems to be meeting a want and doing a good service. It would not be strange that a single school of such a character should find sufficient patronage and favor for its liberal support in any one of our large centres of population, especially in one where there does not exist a well organized and equipped Realschule or non-classical high school. It may be easily admitted that such a school has its utility and its function and is to be welcomed into the ever increasing family of educational institutions, without admitting that it ought to take the place of the non-classical high school without annexed shops. We make progress in education mostly by means of specialization. To meet the new educational wants of an advancing civilization new types of institutions are created. This new type may therefore be regarded as a step of progress, not, however, as a substitute for what has existed, but as an additional instrumentality to meet the wants of individuals not previously so well provided for.

We say, therefore, and we say it emphatically, that it would be a mistake for a city to set up a school on the St. Louis pattern thinking thereby to establish an industrial school. If such a school is to be established, it should be established for what it is, and not for what it is not. It should be established as a particular kind of a high school for general education, and we should say further that it would be a mistake, both in respect to economy and utility, for a city to establish such a school in preference to a Realschule, its proper place being that of supplement to the latter.

Manual Training School in Chicago.—A duplicate of the St. Louis school has recently been established in Chicago under the auspices of the Commercial Club of that city, by the members of which the sum of $100,000 was contributed for this purpose. The corner stone of the large and commodious building which has been erected for its accommodation, on the corner of Michigan avenue and Twelfth street, was laid September 24, 1883. The school was opened early in 1884. Although this school seems to be identical in character with that of the St. Louis school, its founders have, apparently with intention, stated its object in different language, as if to indicate their purpose to be the founding of an institution industrial in character rather than general. Accordingly, they say in the act of incorporation its object shall be as follows: "Instruction and practice in the use of tools, with such instruction as may be deemed necessary in mathematics, drawing, and the English branches of a high school course." Here the "tool instruction" is put in the foreground as the object of the school, while other branches of instruction are added as merely auxiliary and subsidiary. The St. Louis scheme, on the other hand, puts the high school studies in the foreground, while hand work is made supplementary. But the Chicago school does not profess to teach trades any more than that of St. Louis. The circular announcing its opening says:

> The school does not teach trades. Its aim is more comprehensive: it lays the foundation of many trades, and at the same time recognizes the value of intellectual discipline.

It is easier to admit that such a school, by its course of practical studies in mathematics and the natural sciences, lays the foundation of an industrial education than that its workshop instruction lays the foundation of *many* trades.

Baltimore Manual Training School.—Baltimore is the first municipality to establish a manual training school as an integral part of the public school system. The Baltimore school was established October 20, 1883, and opened in March, 1884. In organization and equipment it belongs to the St. Louis type. Its aims and purposes as set forth in its prospectus are identical with those of the Chicago school. Although this school does not profess to "teach trades," it claims to "lay the foundation for many trades." It seems to be the design of its managers to make it more of a technical school than its prototype in St. Louis; but it cannot be described either as a workshop in the school or a school in the workshop, as it divides the time "equally between manual and mental exercises." Candidates for admission must be at least fourteen years of age, and the intellectual qualifications required are about the same as those of the graduates of a grammar school. The fee for the use of books, stationery, tools, and material will be at the rate of $1 per quarter for each resident pupil, the fee for non-residents being $12.50. The principal is Dr. Richard Grady, whose salary is $1,800. The manager of the mechanical department has a salary of $1,000.

The principal says:

> Intellectually, our school stands side by side with the City College, from which it differs particularly in affording scientific instruction and actual practice in the care and use of tools.

A model apprentice school.—A manual training school is one thing and an apprentice school quite another. As yet we have, it is believed, no genuine example of an apprentice school, public or private, in this country. What is an apprentice school? In the first place, it is not a school for general education. It is not a school for a boy who is yet undecided whether he is to gain his livelihood by handicraft or by a commercial occupation. Its purpose is specific; its object is to teach one or more trades, not in full, not so as to dispense wholly with further shop apprenticeship, but to make a real beginning of actual apprenticeship and carry it forward as far as practicable in a school. The shop work of the apprentice school is accompanied by such instruction in different branches of education as the apprentice ought to have if he were in a shop instead of a school. In an apprentice school the shop is the principal thing; the school instruction is supplementary and is especially adapted to the trade or trades taught in the shop; that is, a school is put into the shop. Briefly stated, the object of the apprentice school is to form the skilled workman. Accordingly, the hours of the apprentice school and the holidays should coincide with the hours and holidays of the journeyman mechanic. The apprentice's hardening to work should be begun at once. He is trained to endure drudgery with patience. The manual training school has been described as a school for instruction and not construction. A genuine apprentice school is a school not only for instruction, but also for construction. It teaches the use of tools, both abstractly and concretely; it does not stop, like the St. Louis school and the school of mechanic arts at the Massachusetts Institute of Technology, in Boston, with the abstraction of wood and iron work, but includes in its course the design and execution of perfected projects. But here the technical education *succeeds* the general education, instead of accompanying it.

How far trades should be taught at the public expense is an open question. This question every community must decide for itself. But public sentiment seems to be increasingly in favor of making a beginning in the way of supplying industrial education at the public expense; and in the light of foreign experience it would seem to be advisable that every city of the first class, and perhaps of the second class, should set up at least one apprentice school. In looking for a model school of this class for imitation in all essential features, though perhaps not in every minute detail, we must, in my judgment, go to Paris. The municipal apprentice school of that city, on the boulevard de la Villette, which was opened in December, 1872, was clearly the best of its kind in the world at the time of the Universal Exposition in 1878, and there is no reason to believe that it does not hold the same rank now. This school was not established in a haphazard manner, but on a plan thoroughly matured by Director Gréard, after a profound and exhaustive study of the subject, the results of which he embodied in a remarkable memoir published in 1872 and embraced in the French exhibition of education at the Vienna Exposition in the following year. The excellence and representative character of this school seem to render an account of it somewhat in detail desirable.

The school receives apprentices for the working of metals and of wood. Its object is to form workmen intelligent and skilful in all the parts of their trade. The duration of the apprenticeship is three years. The apprentices are divided into three sections or years, determined by the degree of apprenticeship.

The day comprises six hours in the shop for the first two sections, eight hours for the third; five hours in the school for the first two, three hours for the third.

The pupils are not boarded in the establishment.

The instruction is gratuitous and the pupils are furnished gratuitously with all the materials of study and work.

No pupil is admitted before thirteen years of age nor after sixteen years.

Candidates are received only upon the presentation of certificates of graduation in the elementary school or after an equivalent examination.

The pupils remain within the walls of the establishment from 7 in the morning until 7 in the evening, one hour, from 11 to 12, and a half hour, from 2.30 to 3, being allowed for dinner and luncheon and recreation. These hours are the same for every day in the week, except Sunday, and for all the seasons.

The instruction is divided into two divisions, shop instruction and school instruction, the latter being mostly technical in character. The shop instruction is, first, that of preparation, and, secondly, that of execution. In the preparatory course of the first year each pupil in rotation passes through the shops of wood and iron, performing a succession of elementary exercises. In this preparatory course each pupil in the class has charge of the engine for a certain number of days. The work of execution begins with the second year, when the choice of a speciality is permitted. Besides the shop for working wood and iron there is a department of precision, into which pupils of exceptional talent are admitted.

Instruction and construction are combined; the constructions are sold, but they are not made for sale; they are made solely for instruction, and only such constructions are made as are deemed necessary for the best training of the apprentices.

As the program of the school instruction is believed to be of special interest in this connection, it is introduced here in full.

French language.— Grammar, orthography[1] — Completion of grammar, exercises in composition — Reports of visits to shops and factories.

English language.— Reading and writing, elements of grammar, exercises on the blackboard — Grammar (syntax), translations and themes, conversation.

Mathematics.— Arithmetic, plane geometry, measuring of surfaces — Completion of arithmetic, geometry in space, volumes — Descriptive geometry, applications.

Chemistry.— Elements of general chemistry — Industrial chemistry, applications.

Physics.— Elements of physics, general properties of bodies — Industrial physics, applications — The completion of physics and chemistry.

Mechanics.— Study of simple tools and of the elementary organs of machines — Elements of mechanics, simple machines — Steam engines, machine tools.

Technology.— None — Lessons on materials, their production, their uses — The foregoing completed; resistance of materials.

History.— The rudiments of general history — The history of industry — None.

Geography.— Elements of general geography, geography of Europe and of France — Industrial geography — None.

Drawing.— Freehand drawing, elements of graphic drawing — Geometric and industrial drawing — Drawing of tools and machines.

Law.— None first year — None second year — Elements of law relating to common life.

All the courses of the school are obligatory for all the pupils, the maximum number of whom is 150.

The buildings consist of four structures bounding the four sides of a spacious square interior court, namely, one for work in iron, one for work in wood, one for the school rooms, drawing rooms, laboratories, and the préau couvert, or large hall for wardrobe, lunching, repose, &c., in common for the pupils, and one for the administration and miscellaneous purposes. Experience has proved that in this school the régime of manual labor, broken by intervals of rest taken in the open air and alternating with study, contributes alike to the physical force and to the intelligence and character of the pupils, among whom for five years in succession there was not a single death. This school has been eminently successful; its pupils are in demand at good wages. After it had been fully tested by some eight or ten years of experience, it was decided to establish several more of the same type, adapting the trades taught, so far as practicable, to the prevailing industries of the quarters of the city in which they were respectively located. It seems very desirable that a model school of this class should be established on this side of the water, either at public or private expense.

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[1] The dash divides the requirements of the different years.

The New York apprentice school.—Though we have in this country no apprentice school of the class of the Paris school above described, we are able to record that at length we have one genuine apprentice school, very remarkable and original in character and located precisely in the community where it can do the most good. I refer to the apprentice school for teaching the most important of the building trades which was established in New York by Mr. Richard T. Auchmuty, an eminent building contractor.

This school is believed to be unique both in the kind of trades taught and in the regimen, though in its scope and aim it is similar to the Paris school. This school, or group of schools, does not profess to turn out thorough workmen, but to give a boy enough knowledge and expertness at a trade to enable him to make himself useful in a shop and by constant work to make himself perfect by practice. The trades taught are as follows: Masonry, carpentry, plumbing, plastering (including stucco work), painting (including fresco), wood turning, woodcarving, stone cutting, &c. For the accommodation of these schools, Mr. Auchmuty covered a whole block, measuring 200 by 125 feet, with one-story structures, well lighted and warmed. The accommodations are intended for three hundred apprentices. Admission to these schools is not limited to the founder's employés. The tuition fee is $3 per month. The result of a course in the school is that a boy gets more actual instruction and handles the tools more than he would do if a regular apprentice at a trade. Last spring seventeen of the youthful pupils who had been doing mason's work got situations as journeymen at $4 a day before the end of summer. There has been no lack of pupils and the school has been in all respects successful.

WHAT OUGHT TO BE DONE FOR INDUSTRIAL EDUCATION BY CITY SYSTEMS OF PUBLIC INSTRUCTION.

The term industrial education is here used in its broadest signification, as comprising all the technical education not belonging to the social professions and those relating to the fine arts.

As intimated above, the best thing that can be done for technical education is to make ample provision for a broad, liberal, and thorough general education. Mr. Matheson, the English commissioner who lately visited this country to examine into and report upon our technical education, attributes our remarkable success in mechanical and manufacturing industries to the high standard which we have maintained in our public elementary schools and to the general diffusion of higher education by means of our public high schools and other institutions for secondary instruction. Plainly he could not attribute it to the number and excellence of our industrial or trade schools, either public or private, that would be thought by any one to come within the range of a municipal school system, for such schools do not as yet exist to an extent sufficient to produce any appreciable result. And here a word of caution should be said against putting too much confidence in the current statements put in circulation by anonymous correspondents and superficial and irresponsible observers, to the effect that European countries are dotted all over at the crossroads with technical schools of every kind. Some countries, it is true, are in advance of us in this respect. In superior polytechnic schools, carried on directly by the central governments, the leading foreign countries are considerably in advance of us. And, indeed, within the range of secondary and elementary industrial schools, including trade schools, there is a considerable number of institutions of high merit well deserving our study and imitation; still, the truth is that, on the whole, within this range, the development and dissemination of industrial education is still in its infancy in Europe as well as in America. It would be a mistake, therefore, to undervalue and lower our standard of general education in order to make room for trade schools on the authority of good foreign example.

But without abating our zeal or contracting our scheme of provision for general education, there remains much to be done by our city school systems in providing that kind of instruction and training which fits persons, in part at least, for some particular modes of gaining a livelihood. The provisions for this purpose which seem desirable in the present stage of pedagogical experience and opinion are here briefly enumerated:

(1) A modification of the curriculum of elementary instruction which will render it better, not only for the purposes of general education, but also better as a direct preparation for many industrial pursuits. This modification consists, in brief, in throwing overboard a considerable mass of the useless details of some of the branches now taught, in applying more practical and comprehensive methods of teaching all the subjects, while always aiming at the shortest and most direct means of communicating and enabling the pupils to acquire useful knowledge, and at the same time ignoring processes and exercises merely for the sake of what is called symmetrical development of the mental faculties; thus making room for drawing (both freehand and mechanical), the rudiments of

book-keeping, the rudiments of practical geometry, physics, chemistry, and natural history, modelling and carving for boys, needlework for girls. I omit the workshop for boys, because I think that up to fourteen years of age the above studies, in connection with gymnastics, would be more profitable as a preparation for apprenticeship, and I think boys ought to complete their elementary education at fourteen years of age, and, if they have not, the more reason why they should not then divide school work with shop work.

(2) To teach girls, in all grades of public instruction, sewing and cutting and fitting, and besides, special schools should be established for instruction in the advanced branches of needlework, cutting and fitting, and perhaps millinery.

(3) To establish everywhere, in small cities as well as large, thoroughly equipped evening industrial drawing schools.

(4) Evening high schools should be widely disseminated, giving instruction in more or less technical branches, such as book-keeping, commercial arithmetic, stenography, practical geometry, drawing, &c.

(5) Evening schools devoted exclusively to technical branches, like those in France, elsewhere described.

(6) To establish in the larger cities one or more apprentice schools like that in Paris, on the boulevard de la Villette, above described.

(7) The establishment of simple manual training schools, as they may be demanded, like those in New Haven, Boston, and Peru, Ill., already described, for boys who have completed their elementary studies and for boys already in the grammar schools who wish to attend them out of school hours, whether in the evening or daytime.

(8) To establish in the larger cities manual training schools, after the pattern of the St. Louis school and the school of mechanics connected with the Boston Institute of Technology.

(9) The general establishment of schools of practical cookery for girls, after the pattern of those which have been so successful in the city of London.

SEWING.

No girl can be considered properly educated who cannot sew. If the art of sewing is an indispensable element of a girl's education, why should it not be placed side by side with reading and writing in the common school course of study? That instruction in this branch ought to begin in childhood cannot be doubted. It requires no costly shops, no special rooms even; the ordinary school room affords every requisite convenience. In the earlier stages of the course, at least, the regular teachers might properly give the instruction. The sewing hour affords the pupils agreeable recreation. Experience has proved that competent instruction in sewing can be given in school without any appreciable detriment to the other branches. Experience has also proved that, where there is no school provision for sewing, girls in large numbers fail to acquire the necessary skill in the use of the needle. It would not be strange, therefore, if we should find sewing to be a branch of common school education universally obligatory. And, in fact, it is found to be nearly universal. Unfortunately our own country still remains an exception. Notwithstanding there has been for several years a good deal said about rendering the instruction in our schools more practical, and notwithstanding no authoritative voice has been raised in opposition to the teaching of sewing in the public schools, this most useful branch of instruction is still practically ignored throughout the country. Scarcely a half dozen cities have been reported as having made even an attempt to introduce sewing into the public schools. The following are all that have come to our knowledge:

In Peru, Ill., a beginning has recently been made. At the time when the boys of grammar school No. 2 are in the workshop, the girls of that school have lessons in sewing. Each girl has a workbox, in which are thread, needles, a thimble, a pair of scissors, and a pin cushion. Just at present (March, 1884) these girls are all sewing on white aprons, which are cut from a somewhat elaborate pattern, and which, if well made, are to belong to the makers; but if any are not well made they are to be ripped up and made over again. After this they are to be taught other kinds of sewing, as well as darning and mending.

It was stated in the San Francisco Bulletin of February 13, 1884, that in the Lincoln School, Oakland, Cal., "girls will be taught to use the needle."

A beginning has been made in New Haven. The superintendent (Mr. S. T. Dutton) writes, under date of November 8, 1884:

> We are not doing very much in sewing in our schools. It is taught in two ungraded schools only.

The school board of Philadelphia has made a beginning in this department of practical instruction in the most logical way imaginable by adding it to the course prescribed for the City Normal School. Of this matter the principal (Mr. George W. Fetter) writes, under date of November 17, 1884, as follows:

> Sewing is an obligatory branch in this school. It was introduced a few years since by order of the committee. Every pupil is required to sew, and at the end of the year we examine all just as we examine in arithmetic, &c. At first they are taught plain sewing, then cutting and fitting and dressmaking. No fancy work is allowed. The last year the post graduate class are trained in the best way of teaching it, so that in the future our graduates will be able to teach sewing in the public schools. The work has been very satisfactory and successful, and ere long its good effects will be perceptible throughout our entire school system.

In Boston, the girls taught in the public schools have long enjoyed the benefit of instruction in sewing, and, strangely enough, this is the only American city of which this can be said. About fifty years ago the school board adopted an order *authorizing* the teachers of the girls in the two lower classes of the grammar schools (there were then four classes in all) to teach plain sewing one hour in the afternoon of four days in each week. It does not appear, however, from the school records that this permissive order bore fruit.

The regulations adopted in 1855 contained a provision that "instruction in sewing may be given to all the pupils in the fourth class [lowest, containing about one-third of the pupils] in each of the girls' grammar schools whenever, in the judgment of the district committee, such a course shall be for the best interest of the school." Provision was also made for the appointment of special teachers of this branch who should "give to each pupil two lessons of not less than one hour each every week."

The transfer of the option from the teachers to the committees and the allowance of special teachers proved so effectual that in the next year sewing was taught in all the grammar schools except one. From that time this branch has been constantly advancing in efficiency and in favor among all the parties concerned. During the first ten or twelve years the progress was not rapid, nor was the course of teaching systematic, but nearly all the girls from eight to eleven years of age enjoyed the benefit of a useful course of plain sewing.[1] At length the time came for a new departure in this branch. The superintendent, Mr. John D. Philbrick, in his report for 1869, says:

> It seems to me that it is high time to introduce some improvement in the management of this department. Those who saw the recent exhibition of the needlework of the pupils in Mrs. Dr. Batchelder's Industrial School, got some notion of what might be done in the sewing classes in our schools.
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> It was the force of public opinion, and of a very good public opinion too, which caused the introduction of sewing in opposition to the general wishes of the teachers; and, for one, I frankly confess that I hope public opinion will go much further in this direction. I will even go so far as to say that I should like to see the arts and mysteries of needlework taught in all the grades of our schools for girls, from the lowest class in the primary school to the highest in the girls' high and normal.

The large development of this branch thus virtually recommended has not yet been realized, although the movement towards it has been considerable.

In this report, the appointment of a special committee on this department of instruction was suggested, and four or five years later it was adopted. At the date of the report above referred to, in one school, the Winthrop (Mr. Robert Swan, master), besides the regular instruction in sewing, special lessons were given to a portion of the older girls with excellent results, the expense for material and tuition being borne by a public spirited lady, Mrs. Augustus Hemenway.

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[1] Mlle. Marie Loizillon, inspectress general of maternal schools in France, in her recent report (1883) to the minister of public instruction on American schools, makes the twofold mistake of stating (1) that sewing was very recently (tout récemment) introduced into the public schools of Boston and (2) that it was by the ladies on the school board (l'élément féminin dans le bureau d'éducation) made obligatory and placed on the same footing as the other studies.

During the same year it was made evident in the Bigelow School that, by good management, admirable results could be produced in the lowest grades. The master (Mr. Henry C. Hardon) laid down the following rules to be observed:

(1) No scholar is to be excused for not attending to sewing in sewing time, no matter how good instruction in that department she may claim to receive at home.

(2) All work is to be left at school till its completion and put into baskets prepared for the purpose, each girl's work having been first wrapped in her sewing wrapper or put into her sewing bag. To collect and distribute these parcels is the work of a moment, and all the materials are then on hand and no time is lost.

(3) A report to be kept of each girl's work, in tables prepared for the purpose in a suitable blank book. (To *finish* a piece of work to carry home to mother now is an object of ambition, and so it is to stand well in the report.)

(4) When practicable, having noticed common failures in style or execution, instruct the class as a body in the best methods of performance.

The capable sewing teacher (Mrs. Eliza Cleary), aided by the hearty coöperation of the regular teachers, efficiently carried out this judicious plan. During the first four months of the experiment, the pieces of work done by the pupils, about two hundred and fifty in five class rooms, amounted to nearly sixteen hundred. A detailed report of the plan and its results was sent to the superintendent, and thus was commènced the system of reporting in detail the sewing work done in the several schools, which has proved to be highly beneficial in promoting success in this branch. This example was not lost upon the other schools. In the next year, 1870, the board made sewing *obligatory in every girl's school*—it had been kept out of one or two at times—and extended it to the three lower of the six classes (classification of 1868), comprising about two-thirds of the pupils in this grade of schools, provided that not more than six divisions should be taught in any one school—division meaning the scholars in a separate room under one teacher.

This was the outcome of the report of a second special committee on industrial education, both of which had limited their recommendations mostly to the enlargement of the department of sewing in the girls' grammar schools. The second committee went so far as to recommend that instruction in this branch be given in all the classes except the first and second, and that in the third and fourth classes instruction in cutting and fitting be added. About two years later a third special committee (Rev. Dr. S. K. Lothrop, chairman) on the subject went so far as to recommend the extension of instruction in sewing into the *three upper classes* of the grammar schools, and they proposed an important enlargement in the character and practical instructions given, in recommending that practical instruction in cutting, fitting, and thoroughly making children's and ladies' garments should be given to members of the first and second classes of the girls' grammar schools. And they further recommended that a sewing teacher thoroughly competent to give this instruction should be employed in each girls' school, giving her whole time to this service, and that for the purposes of this instruction the necessary material be furnished at the expense of the city to an extent not exceeding $200 to each school and not exceeding $50 to any one division.

This advanced and comprehensive plan, which was not adopted, and which has not even now been fully accepted and carried out, was doubtless largely inspired by the decided impulse which had been given to the teaching of sewing during the two or three years following the new departure above referred to. The superintendent had given it his special attention, as appears from his report of 1872, in which he reiterates his view in favor of extending sewing to the three upper classes; gives the statistics showing that it was taught, in eighty-four divisions, to 3,948 girls, at an expense of about $8,000; gives a detailed report of the year's work done, in one school amounting to 4,268 pieces, as a model for the reports which he solicited from all the schools; presents an account of the first meeting of sewing teachers at his office, at which a committee was appointed to prepare a graded program of the work to be done and it was unanimously agreed that there should be an annual exhibition of the needlework of the pupils in each school where sewing was taught, at the time of the usual annual exhibitions of those schools, and the suggestion was made that it would be well for each teacher to send to the superintendent an annual report of the work done by her pupils; states that accordingly in several schools very creditable exhibitions of sewing had been held and that carefully prepared reports of work done had been already sent in by about one-half of the teachers; recommends that the school board appoint a competent committee of ladies to examine the instruction in sewing and report thereon; informs the board that in a quiet and informal way a recent inspection had actually been made of the sewing in several schools by a committee of the Woman's Education Society, who reported that they "found sewing well taught in the fifth and sixth classes of our grammar schools and in one visited (the Wells) in the lowest division of the fourth also," and made valuable suggestions for the improvement and extension of teaching sewing; and the report of the superintendent further says: "A new interest has been awakened in regard to sewing, both among teachers and pupils. Whenever I ask the classes of girls who are employed with their needles if they like their sewing lessons, I always get an emphatic answer in the affirmative. The teachers seem anxious to systematize and improve their plans of instruction and to carry forward their pupils to higher grades of work than they formerly attempted." The committee of the Woman's Education Society in their report above referred to strongly recommend a *general* yearly exhibition in addition to the local exhibitions in the local schools, already inaugurated.

In the mean time an interesting experiment in teaching advanced work to a division of girls too old for the primary school and not qualified for the grammar, in charge of Miss Elizabeth P. Emmons, on Tyler street, was in progress, the tuition and materials being paid for by Mrs. Hemenway.

Thus the board was at length induced to take another important step in the development of hand work for girls by voting in 1873, at the request of the committee on the Winthrop School, with the zealous coöperation of the master, to allow sewing to be taught in all the classes of that school, the upper class to be taught also cutting and fitting; and the instruction thus extended has continued in that school without interruption to the present time. Before the end of the school year the pupils in the upper class had cut and made dresses for themselves. A public exhibition in the hall of the school building of the work of the pupils in all the classes soon followed, attracting much attention. At the same time the fourteen school rooms, filled with happy, bright girls, might be seen busily engaged with their great variety of needlework; the girls in the upper class in the mean time, a number of them being clad in dresses cut and made by their own fingers, were occupied in cutting and fitting dresses and illustrating the process by diagrams on the blackboard. Altogether the experiment showed the most gratifying results, and the next year the superintendent remarked in his report, as follows:

> The carrying out of this plan in all the girls' schools is now evidently only a question of time. Already the example of the Winthrop School has been followed since the beginning of the present school year by the Gaston School. The time has come when, probably, there will be no opposition in the board to a general order permitting the same thing to be done in all the girls' grammar schools. The extension of instruction in this branch need not involve an increase of expense, as the regular teachers might be required to assist the special.

Although this was giving to the board, as the sequel proved, too much credit, nevertheless sewing continued to make its way so well that it was creditably represented in the Boston exhibit at the Centennial Exposition in Philadelphia by at least six schools, each sending a large portfolio filled with admirable work. In the mean time the board had taken another step in advance by providing for a standing committee on sewing, charged with a general supervision of this branch and the duty of submitting an annual report on its condition and progress. To this provision is due to a large extent whatever has been done to increase the efficiency in teaching sewing during the last decade.

The employment of special teachers of sewing having been pronounced illegal by the city solicitor, an act of the legislature was procured (approved February 1, 1876) authorizing the school committee of any city or town to require the teaching of sewing in all the public schools thereof. At about the same time the school board removed the restriction of the teaching of sewing to six divisions, which had operated unequally and to the disadvantage of the larger schools where the six divisions did not comprise the whole of the three lower classes. At the same time the regulation on this subject was amended by providing that sewing may be extended into other classes by the board on the joint recommendation of the committee on sewing and the division committee of the school where such extension is proposed. This, however, does not seem to be a step in advance, as the effect was to tie up the hands of the board, whereas, previously, the board had been free to extend sewing into the upper classes without such limitation. In 1877 the standing committee report that the total number of articles made in all the schools during the year amounted to 72,721, and remarked: "But only those who have inspected the work shown at the various exhibitions of sewing can appreciate fully how much reason we have to be pleased with the results accomplished in this direction. The neatly-set stitches, the nice and exact finishing, and the variety in the kinds of work done bear testimony both to the faithfulness of the teachers and to the attention and interest of the pupils." It is a curious fact that the number of articles made each year since has varied but slightly from the figures above stated. It appears from the latest report (September, 1883) of the standing committee on this branch that the work accomplished not only furnished satisfactory materials for the annual exhibitions at the various schools, but that it is also thoroughly appreciated in the homes of the children, where the practical value of such instruction to girls of all classes is often very obvious and its assistance to the many to whom needlework affords a livelihood is inestimable. It appears that the exhibitions have lost none of their attractions by repetition; on the contrary, interest in them increases from year to year; more persons visit them and much satisfaction is expressed by the parents and friends of the pupils and visitors generally with the results there presented for public inspection.

Interesting proofs of the practical value of this industrial training are abundant. By the skill of the needle thus obtained, young girls fresh from school are enabled to find steady and remunerative employment. Many, while yet in school, are rendered capable of keeping their own garments and those of younger sisters and brothers in good repair, where before there had been rents and rags.

Many graduates of the schools, now occupying advantageous positions, attribute their skill in fine needlework entirely to the teaching received at school.

The progress realized during the last eight years may be summed up in two items: (1) The removal of the restrictions of this branch to the six lower divisions, which had kept it out of a few divisions in the larger schools; (2) an improvement in the average quality of the work. It is discouraging to be obliged to report that so little ground has been gained in carrying needlework into the three upper classes, only one school added during the last ten years, the number standing three at the present time. If, therefore, during these thirty years of effort and experiment a good work has been accomplished, much still remains to be done. The number of sewing teachers employed is twenty-seven, the salary varying with the number of divisions taught: for the first division, $108; for over eleven divisions, $744.

The following account of the order of instruction and practical management in the school where it was first carried up through all the classes will be, it is believed, especially valued by those who are interested in propagating this branch of education.

Instruction in sewing for the last ten years has been given throughout the Winthrop School by a teacher employed for that purpose, who devotes the same time as the other teachers and receives similar compensation.

The divisions of the sixth, fifth, and fourth classes have two lessons of an hour each per week; the third and second, one lesson of an hour. The girls of the first class are taught to "cut and fit" by measurement and draughting.

The material is brought from the homes; the work is prepared by the teacher and is kept at the school in a large work basket (one being supplied for each class). When completed it is examined by the regular teacher of the class, and, if satisfactorily done, is given to the child to take home. If from any cause a scholar is without the proper material, it is furnished from a supply procured from a charitable society; but in such cases the garment is not given to the maker, but is returned to the society. With this rule there is no difficulty in procuring material without expense to the city, except some thread, needles, and thimbles for emergencies. Cases frequently occur where very poor children save their pennies and thus procure the needed work.

The following is the order of instruction:

Back stitching, hemming, top-sewing, overcasting, running, felling, gathering, stroking gathers, hemming on gathers, button holes, sewing on buttons, mending, darning, basting, flannel stitch, herring bone stitch, feather stitch, cutting.

As it is desirable that the instruction shall be such as to accomplish the most good, not only to the children, but also in the homes whence they come, the pupils are encouraged to bring garments and other large pieces that can be utilized in the family, thus relieving the mothers from many weary hours of night work and at the same time giving opportunity for the best quality of instruction.[1]

The present regulations for the department of sewing in the public schools are as follows:

(1) Two hours a week, as appointed by the regulations of the school committee, shall be given to each scholar of the fourth, fifth, and sixth classes of the grammar schools, one hour at a time, for instruction in sewing. This time should not be shortened for other studies or examinations, or any other purposes, without the consent of the committee on sewing especially obtained.

(2) Each scholar shall be requested to bring work from home prepared as far as possible. But in any case where it is not so provided the sewing teacher will be expected to have work on hand, that there may be no excuse for an unoccupied hour and that time may not be wasted in sending home for work.

(3) A sufficient supply of needles, thread, and thimbles shall be kept on hand by the sewing teacher to furnish to any child who is without them, from carelessness or inability to supply them, or who has not the proper needle or thread for her work.

(4) The sewing teacher is requested to make all preparation and fitting of work out

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[1] From information furnished by Mr. Robert Swan, master.

of school, that she may give the whole of the hour to the oversight of the work. Any fitting that requires time should be laid aside, to be attended to out of the hour, and other work supplied in its place.

(5) Every effort should be made to vary the instruction, that every girl may learn thoroughly the varieties of work. If she has learned one kind of work, the sewing teacher is requested to furnish her with some other variety of work, that she may be made efficient in all kinds of work. In this way patchwork should be discouraged after a scholar has learned thoroughly what can be learned from it. Every effort should be made for promotion in work from plain sewing, through the darning of stockings, to nice stitching and button holes, from the simpler to the more difficult, in order to give an interest and desire for perfection in such work. It is a good plan to keep pieces of cloth for practice in making button holes, stitching, or any other special work which can be given wherever there is want of work, or if other work has been completed in the course of the hour, or to carry out the idea of promotion.

(6) The sewing teacher may find assistance from any charitable society with which she is connected which would willingly furnish garments prepared and fitted, to be returned to the society when completed; or she can suggest to any scholar who has not provided material for her work that she may show to her mother the garment she has finished at school and offer it to her for the price of the material. Many a mother would like to buy such a garment for its use or for a specimen of work, if it is well done.

(7) The regular teacher of the class is expected to take entire charge of the discipline of the class, as she is more thoroughly acquainted with her scholars; also, to see that the work is distributed promptly at the beginning of the hour, either by herself or through monitors, and to assist in keeping each scholar diligently occupied through the sewing hour. It is recommended that she should give credits or marks for efficiency or inefficiency in sewing, in the same manner and according to the methods pursued in other lessons in her class.

In the mixed schools, when girls are taken from one or more classes to form one division, the boys of these classes can be put under one teacher, while the other takes charge of the class in sewing, and these teachers can alternate in their duties.

In presenting thus fully the main facts relating to the progress and development of sewing in the only one of our cities where it has been generally and thoroughly taught in the public schools, it is intended to emphasize the importance and utility of this branch of elementary instruction, which is so strangely ignored in the current pleas for a practical education, while at the same time making more easily accessible such information on the subject as may be desired by those who may engage in its investigation.

But we must go to foreign countries if we would learn the true place and the utility of needlework as an element in female education. If we go to Berlin, or Vienna, or Paris, we shall find that every girl in the elementary public school is systematically taught sewing, not in a part of the classes but in every class. From these great capitals down through all grades of municipalities to the humblest village on the continent of Europe, where girls are taught reading, writing, and arithmetic, as a rule they are taught sewing equally well. In the noble high schools for girls, which I visited ten years ago in Hanover and Berlin, the girls were required to give to needlework four hours a week; and at the fine normal school for girls, installed in an ancient palace in the beautiful capital of Hungary, there was a plentiful supply of American sewing machines and the directors showed the handwork of the pupils with no little pride.

> It is safe to say that all the graduates of the female seminaries in all German-speaking countries are perfectly able to do their own sewing, knitting, embroidery, &c., and to successfully conduct a class in these branches.—(C. H. Pluggé, in Report of the Commissioner of Education for 1879, p. ccxiv.)

> An interesting feature of the girls' schools (Paris) is the manner in which the various branches of the art of the seamstress are taught. Two and three hours a week are devoted to progressive exercises in sewing through the course of three years. In the superior course the girls are obliged every Thursday to follow a regular course of instruction, given by special mistresses, in cutting and fitting. Each lesson is for three hours. The girls are very bright at these exercises. One is called out to measure another, as for a dress; she gives the proper numbers to a third, who writes them on a slate or blackboard. A fourth glances at these figures and immediately begins to cut a pattern. A fifth girl then takes the pattern and fits it to the person for whom it was intended. The rapidity of the action and the accuracy of the result are quite interesting to witness. There can be no hesitation in speaking of this branch of education for girls of every station in every community with the highest commendation.—(From the very valuable official report on education, as United States commissioner at the Universal Exposition at Paris, 1878, by General Joshua L. Chamberlain, ex-president of Bowdoin College.)

By "superior course" in the above extract is meant the upper third of the elementary school program. The instruction in cutting and fitting was given in this course on the weekly holiday, Thursday. The expense was at first defrayed by contributions from friends of the schools. So great was the favor with which this instruction was received that children were allowed to remain another year in school in order to secure the advantage of it.

The success of this experiment in advanced needlework was such that the administration organized central classes for giving this instruction in each of the twenty arrondissements of the city, where on each Thursday, either in the morning or the afternoon, girls belonging to the superior course could receive a weekly lesson of three hours. The instruction is at once theoretical and practical; the rules upon which it rests are illustrated upon the blackboard. The measures for the cutting of the garment and the arrangements for the fitting are the object of a mathematical diagram or a demonstrative explication. The pupil proceeds to the execution of the work only after the preparation has been reasoned out and understood. These central classes were established in 1878, and the director of the city schools, in his report of that date, expresses the opinion that it will be necessary to establish a class for this advanced work in each school.

The public school system of Great Britain, which has made such rapid strides since its establishment (1870), has followed the example of the Continent in respect to this branch, Professor Huxley setting the example in placing "plain needlework and cutting out" on the list of essential subjects for girls' schools in his scheme for studies submitted to the London school board.

The most important practical conclusions on this subject arrived at by the writer are formulated in the following propositions:

(1) No girl can be properly educated who cannot sew. It would be a waste of time to demonstrate the importance of this part of a girl's education.

(2) If this education were left to the homes it would be imperfect or wholly neglected, especially in the homes where it would be of the greatest practical utility.

(3) That sewing should be an obligatory branch of instruction in all elementary public schools where girls are taught is both desirable and practicable.

(4) The instruction should begin with girls when about eight years of age and continue throughout the elementary course, from one to three hours a week being given to the lessons.

(5) The course of instruction should be graded, beginning with plain sewing and mending and advancing to cutting and fitting.

(6) The regular teachers might give the instruction in the lower grades, the employment of special teachers being limited to the upper classes.

(7) Ability to teach sewing ought to be reckoned among the essential qualifications of a teacher of girls in the lower classes of elementary schools.

(8) In large cities regional classes should be established, after the plan in Paris, for instructing in advanced needlework girls who have graduated from the elementary schools and others qualified for admission.

(9) In cities of the first magnitude, and perhaps those of the second also, the system of instruction in sewing should culminate in a central school for teaching the most advanced stages of practical needlework, including dressmaking and millinery.

GYMNASTICS.

Within the last twenty or twenty-five years the physical exercises commonly called free gymnastics have been introduced into a great number of city schools. By free gymnastics is meant such exercise of the muscles of the limbs and trunk as is practicable without the aid of any apparatus whatever. These exercises are taken by pupils either in their seats or in a standing posture; and marching, which may be regarded as an exercise in free gymnastics, is much practised. To a certain extent simple apparatus, such as wands and dumbbells, mostly of wood, are used. In some cities use has been made more or less extensively of a system of vocal gymnastics. This system comprises the special exercise, development, and training of the muscles employed in respiration and the production of vocal sounds. It aims particularly to promote expansion of the chest and the habit of fully inflating the lungs in breathing. All these physical exercises are good in theory and good in practice too if given with skill and discretion by the teachers. It is desirable that some form of free gymnastics—that is, the most appropriate muscular exercises without apparatus, which are sometimes called calisthenics—should be introduced into schools of all grades. Great care should be taken, however, that the exercises should be of the right kind and taken in the right way. They should be supervised and directed by competent experts.

But physical exercises of this description are not sufficient; no city system of schools can be considered as up to the standard of the day that has not gymnasiums and teachers of gymnastics sufficient for the pupils of all grades. It is to be regretted that no one of our American cities can be named where such provision exists. A few high schools, as elsewhere stated, are provided with commodious and well equipped gymnasiums, but high school gymnasiums of this class, or indeed of any description, are few and far between, while gymnasiums for grammar and primary schools are, it is believed, wholly wanting. This is a grave defect in our city systems of education. It precedes logically the hand training about which so much is said at present. If the history of education has made anything certain, it has made it certain that the gymnasium is an essential appendage of the school-house. It is well known that Germany took the lead in making gymnastics one of the branches of public instruction. Physical training was introduced into the public schools of Germany in the early part of the present century as one of the essential means of the regeneration of the nation. After Sadowa the statesmen of Austria followed the example.

For more than sixty years gymnastic training has constituted a prominent element in Prussian school education. Jahn, the great early promoter of physical training in Prussia, is now justly reckoned among the benefactors of his country; and, in recognition of the benefits of his labors, a noble statue has been erected to his honor in Berlin. In Berlin gymnastics have been longer and more generally cultivated perhaps than in any other city. In this city there has existed for a long time a large and well appointed government establishment for the training and preparation of teachers of gymnastics for the public schools. Although Vienna has been comparatively tardy in adopting this educational improvement, she now probably surpasses all other cities in respect to liberality of provision for gymnastics. In every recently erected school edifice, whether for elementary or secondary schools, the spacious and lofty gymnastic hall, with adjacent wardrobes and other accommodations, is provided. There are at present 110 special teachers of gymnastics constantly employed by the city in public schools. The educational authorities of Vienna are fully justified in their large expenditures for physical training, in view of the acknowledged advantages which have been derived from it in Northern Germany.

In speaking of physical training in the German schools, Matthew Arnold says:

> The teachers [of gymnastics] profess to have adapted their exercises with precision to every age and to all stages of a boy's growth and muscular development. If boys have long work hours or if they work hard, gymnastics probably do more for their physical health in the comparatively short time allotted to recreation than anything else could. In England the majority of Public School boys[1] work far less than the foreign school boy, and for this majority the English games are delightful; but for the few hard students with us there is in general nothing but the "constitutional," and this is not so good as the foreign gymnastics.

In the German and Austrian schools gymnastic training is not provided for boys alone. Girls also receive the benefit of regular physical exercises especially adapted to the different stages of their muscular growth.

I have long been impressed with the lamentable defect of our city systems of schools in respect to physical education. After seeing what has been done for this essential branch of education in Vienna and Berlin, our own deficiency in this respect seems tenfold more glaring. A radical reform is needed. Twenty-four years ago I began my efforts to introduce into all grades of the Boston schools "a thorough system of physical training as a part of school culture." Some progress has been made in this direction. For some years the program has required daily physical exercises in the schools; but as yet our provisions for physical education are very inadequate. So far as I know, there is not a single special, thoroughly qualified teacher of gymnastics employed by any city in America.

> To my mind nothing is more certain than that the highest success in intellectual education can be reached only by the aid of the most thorough system of physical training.

During the ten years which have elapsed since the above sentiment was expressed in one of my reports physical culture appears to have made but little progress in our public schools. In the mean time the French Republic, following the example of Austria in borrowing this element of popular education from her victorious foe, has by statute made instruction in gymnastics obligatory in all her public schools. When the bill for this provision came up for discussion it met with no opposition of any account, and was passed both by the senate and chamber of deputies with almost entire unanimity.

FIRE DRILL.

The disasters which have been caused by fire panics in large schools have suggested the generally known precautions of fire proof furnace and boiler rooms, fire escapes, safe staircases, and the outward opening of the main doors of entrance. But these will be of little avail in a panic without discipline, and presence of mind on the part of the teachers, and especially of the principal. The fire drill, which has been introduced more or less extensively, is not only an effective safeguard against the danger of panics, but also a good gymnastic exercise. The fire drill in the city of Rochester, as described in a recent report of the superintendent of the schools of Springfield, Mass., is a good example for general imitation. He says:

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[1] Boys in the great secondary schools, Eton, Rugby, &c.

> At a given signal, which is heard through the building, all the pupils in every school room rise instantly to their feet, form in line, as they have been previously instructed under the direction of their teachers, and pass rapidly, in double lines, down the stairways and out into the yard, those on the first floor going out first and those on the second and third following in order. Upon reaching the yard they form into lines again facing the building, ready for further orders. The pupils all understand perfectly the order in which the occupants of the different rooms are to fall into line in the hallways and by what stairways and doors they are to pass out of the building. This exercise originated, I believe, in an attempt to provide a rapid, orderly, and safe exit from the building in case of an alarm of fire or of a panic of any kind; but it is now used also in many places as a pleasant and safe kind of recreation. In cold and stormy weather it can be carried out, partially at least, in sections, in the hallways and basement.
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> As I saw the fire drill in the Rochester schools, it seemed to me to be an admirable example of what can be accomplished for a good purpose by thorough discipline and drill. One of the most remarkable things about it was the rapidity with which it was performed. Many of the school-houses at Rochester are larger than those in this city, and in this exercise their buildings are usually cleared of all their pupils in about a minute from the time the first signal is given.
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> In one instance, in which I timed the movements by my watch, 625 pupils passed into the yard in 40 seconds. And yet there was no confusion, no crowding, nor pushing, nor stumbling, and no loud talking; but the pupils gave unmistakable evidence in their faces that they greatly enjoyed the drill.—(Report of 1883 by A. P. Stone, LL. D.)

At Denver the ordinary movement of the pupils at recess in all the schools is similar to that of the fire drill above described. There is some danger that in case of the older girls' this rapid movement may be injurious; pupils having any special weakness should of course be excused from it.

In the schools of the city of Vienna measures have been taken to insure the emptying of the class rooms without disorder in case of fire. The pupils are trained for this manœuvre, which is executed in three different ways, according to the degree of urgency, on signals given by the instructor. In the case of a fire in the neighborhood (signal No. 1) the children place their books in their satchels, put on their outer garments, and leave the class room in groups of four. If the danger is imminent (signal No. 2) the books are left, the outer garments rapidly put on, and the class room is left as before. Finally, in case of extreme peril (signal No. 3) their books and clothing are left and the exit is made immediately in groups. According to an experiment made recently at the Bürgerschule of the Werderthorstrasse, twenty class rooms, containing a thousand children, were vacated in ten minutes without the least disorder.

MILITARY DRILL.

Military drill became an element of public instruction in Boston in 1864. It was at first tried in the Latin and high schools for boys, and also in the upper class of two grammar schools for boys. As the result of the experiment during the first few months, it was decided to discontinue the drill in the grammar schools, but to retain it in the high schools for boys. During the twenty years since elapsed there has been constant progress in this branch. The present school regulations provide that instruction in military drill shall be given by a special drill officer, in the high schools, to boys of good physical condition who are thirteen years old or more, the time not to exceed two hours per week.

Drums, muskets, and belts and swords for officers are provided at the expense of the city. The boys provide their own uniforms, which are neat but inexpensive. The grand drill hall and armory in connection with the Latin and English high schools is elsewhere described.[1] The same admirable instructor (General Hobart Moore) has been employed since the beginning.

The school regiment consists of three battalions and twenty-five companies. There is an annual exhibition of the proficiency of each battalion, which never fails to draw a crowd of interested spectators.

To say nothing of the value of this instruction as a means for the preservation of public order and for the national defence, as an educational instrumentality, in promoting physical, moral, and intellectual culture, it has been signally beneficial. It has proved a valuable, though perhaps not a perfect, system of gymnastics; it has developed a more manly spirit in the boys, invigorated their intellects both directly and indirectly, and made them more graceful and gentlemanly in their bearing.

Instruction in military drill is given to high school boys in several other cities and large towns in Massachusetts.

From my observation of the beneficial results of this branch of instruction, I feel justified in strongly recommending its general introduction.

GRATUITOUS INSTRUCTION.

Gratuity of instruction is a feature of our school system, for which we may claim a merit of a peculiar character. It is true that the materials of instruction, such as text books and stationery, are as yet furnished at the public expense only in exceptional cases and in certain localities, but nowhere in our thirty-eight sovran States, either in city or country, is the child met at the school-house door with a demand for the payment of a school fee. Tuition in all public schools, whether elementary or high, is with us absolutely gratuitous.[2] Public schools are free schools. This is, without doubt, the distinguishing character-tuition and free accommodations. Something may be said to the purpose against every possible arrangement. The opponents of this provision tell us that it is communism: the only proper answer to this charge is that gratuitous instruction is in exactly the same sense communism. They say that it is detrimental to the development in the pupils of the spirit of self reliance. To this assertion the reply is that the same objection has been urged against free tuition, but experience has shown it to be without foundation. Moreover, it is said, the pupils will not take proper care of the books which they do not own. Experience refutes this assertion, too. In fine it is claimed that it is a good thing for pupils to own their books and keep them after leaving school as mementos and for the purpose of reference. This is no doubt a just claim, but it is of little importance compared with the great advantages of free books. The two chief arguments in favor of free books are (1) the economic consideration: the saving of expense and the great saving of the time of the teachers and pupils; (2) the moral consideration: an invidious distinction between the children of the well to do and the indigent, as far as school provision is concerned, is obliterated. The policy of furnishing free books was long ago adopted by New York. Its success here has led to its adoption in a number of other cities, and it appears to have been generally approved wherever it has been applied. In Philadelphia the average yearly cost for each pupil has been less than one dollar. At the recent session of the legislature of Massachusetts, 1884, an act was passed requiring all the towns and cities in the State to furnish all the pupils in the public schools with free books and stationery.[1] There is, however, one danger to be guarded against to which the free book system is liable, namely, that school committees may be tempted to permit the principals of schools to select text books from an approved list, as is the case in New York City, instead of requiring an absolute uniformity in all the schools of the same city or town. The Massachusetts act referred to is defective in not embodying this safeguard. There can be no doubt that ultimately gratuity of school books will be coextensive with gratuity of tuition, as they rest on one and the same foundation and a conclusive argument in favor of one is equally conclusive in favor of the other.

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[1] See the subject "School architecture."

[2] In Baltimore, there is a partial exception to this universal rule. Here the pupils pay $2 per term, nominally to defray the expense of text books; but this is, in reality, three or four times as much as would be required for that purpose.

> Remove all possible distinction between the children of the rich and the children of the poor man. Let the children go into the school-house that is free for all of them. And the teachers — they, too, are free, certainly. But why withhold the books? So the legislature said there shall be free text books for all the children of this Commonwealth. Those are good things and they are in the laws.—(Extract from a speech by His Excellency George D. Robinson, governor of Massachusetts.)

ECONOMY.

Good educational advantages are nowhere cheap, and it is wise to assume that good schools must, in the nature of things, be costly schools.

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[1] The immediate result of this legislation has been to largely increase the number of pupils entering the high school.

It is not necessary to admit, however, that schools are uniformly good or bad in proportion as they are dear or cheap. There is large scope for economy in the administration of a school system. An examination of school reports makes it apparent that school boards differ widely from one another in respect to their ideas of what constitutes true economy in the management of school affairs. Some boards seem to be ambitious to prove that they are educating pupils at the lowest cost per capita; and, accordingly, they publish in their reports comparative tables, showing that the schools under their charge are carried on at less expense than those of other cities selected by them for comparison. Some boards and superintendents are constrained to make such exhibits, doubtless, to silence the clamor of illiberal taxpayers against what they call extravagance in the maintenance of public schools. But in the more advanced communities the school boards very generally assume that it is their first duty to provide schooling of a very high degree of excellence rather than to run the system at the cheapest rate per scholar. It is pretty safe to assume that cheap schools are poor schools; but, on the other hand, it is not true that the cost of instruction per capita is a sure indication of the value of the instruction afforded. In a wise administration, while the best education is aimed at, or, at any rate, a reasonably good quality of education, at the same time, in every part of the service, care is taken that every dollar of the school money is turned to the best account. The appropriate legend to be placed over the door of the school board hall is, "Good schools for all; not a dollar to be wasted." From the mere fact of high or low cost per capita of a school system, no inference can be drawn as to the merit in the economic point of view of the school board. That administration is the best, economically considered, which makes every dollar yield the best return. The question is where to save without detriment to efficiency. I found in the Denver system a remarkable example of efficiency and economy combined. This was the result, of course, of the superior ability and public spirited devotion of the school board and superintendent.

In the current criticisms of our city school systems, the hackneyed complaint is that the school money is lavished on showy school architecture. This complaint is, for the most part, groundless; but it is a fact worthy the attention of authorities charged with the responsibility of school-house building that the cost of school-houses in different cities is not at all proportioned to their capacity and general excellence. I have been astonished to find school-houses in one city, school-houses costing $10,000 or $12,000, apparently as good as those costing $30,000 or $40,000 in another.

Cities might be named where great stress is laid on economical management in giving out dippers, brooms, and mats, while immense waste is all the while going on with the teaching force of the teachers and the learning capability of the pupils, for the want of a wise and efficient direction.

In carrying on a system of schools, by far the largest item of cost in money is that of tuition. The rate of tuition is determined, of course, by the number of teachers and the rate of their salaries. With high salaries and a liberal supply of teachers, or, what amounts to the same thing, a small number of pupils to a teacher, the cost of tuition per capita must, of course, be large. On the other hand, by paying the teachers a minimum salary and assigning them a maximum number of pupils to teach, of course, we have as a result the minimum cost of tuition per capita, and with it, inevitably, a minimum result. As a rule, each school board has assigned to it yearly a certain fixed amount of money for the ordinary school expenses. This being the case, by far the most important economic question for the board to decide is that relating to the adjustment of the rate of salaries and the number of pupils to a teacher. A maximum number of pupils to a teacher will afford a maximum salary, while a minimum number of pupils to a teacher affords the minimum salary. It is evident that both these extremes should be avoided. In this matter, the middle ground is the wise one. Now, what is the middle ground in respect to the number of pupils to a teacher? Experience must determine. If as many as seventy-five or a hundred pupils are given to a teacher, every school man knows that the result must be insufficient instruction. On the other hand, there are enthusiastic reformers who insist that the number of pupils to a teacher in the public schools should be as low as thirty in order to produce the desired result. But it is evident that the employment of teachers sufficient in number for this plan, at living salaries, would involve an expenditure beyond the means available in the present state of society. A fair medium number of pupils to a teacher in a well graded system of the primary and grammar grades lies somewhere between the limits of fifty and sixty. Fifty-six may be considered as a reasonable standard register number for the primary grade, sixty and fifty being the maximum and minimum limits respectively. The grammar grade, especially in the upper classes, might be allowed a little lower standard. With good school rooms and furnishings, an average of fifty-four on the register of the primary and grammar grades taken together would, perhaps, come nearest to meeting the requirements both of economy and efficiency. An average register of fifty-four ought to give an average attendance of about fifty. This number can be efficiently handled by the average teacher in one class in such branches as writing, drawing, spelling, object lessons, singing, and perhaps reading. In some other branches, such as arithmetic, grammar, geography, &c., where it may be expedient to divide the class into two sections, twenty-five is not too large a number for class instruction by the average teacher.

As the number to a teacher rises above the standards here assumed, the efficiency of instruction must rapidly diminish. As it falls below, the expense rapidly increases; but experience proves that the value of the results does not increase in the same ratio. I imagine that superintendents are not accustomed to find in classes of forty pupils to a teacher any appreciable superiority over classes containing fifty pupils to a teacher. It has been held by some educational officials that in the lowest primary classes a much smaller number of pupils should be assigned to a teacher than in the higher grades; but this view is not sustained by the soundest pedagogical authority. The higher the grade the smaller the number of pupils to a teacher. This is a sound principle, and there is no good reason why it should not be applied to the lowest primary classes as well as to other grades.

In our country little or nothing has been done by statutory provision to limit the number of pupils that may be assigned to a teacher, while in the foreign countries prominent in education the maximum number of pupils to a teacher is prescribed by law. With us this is a matter within the control of the school boards.

Taking New York in illustration of the phase of economy under consideration we find regulations of the board as to the number of pupils to a teacher, as follows:

(1) No class in the grammar school shall contain more than sixty pupils.

(2) No class in the primary school shall contain more than seventy-five pupils.

(3) No teacher shall be appointed by the board of trustees in any ward unless the average attendance of pupils shall be equal to at least thirty-five to each teacher in a grammar school and at least fifty to each teacher in a primary school (exclusive of the principals and teachers of special subjects).

By comparing these regulations one cannot but be struck by the very wide range between the maximum and minimum limits, this range being twenty-five both in the grammar and primary schools. If the board of trustees in one ward should carry on the grammar schools with the maximum number of pupils permitted to a teacher and the trustees in another with the minimum number, the cost per capita for tuition in the former would be about 58 per cent. of the cost in the latter. Again, if the trustees of a ward should require the primary schools to keep up the maximum number to a teacher, while running the grammar schools with the minimum number, the cost per capita in the former would be only about 46 per cent. of the cost in the latter, this calculation being based on the assumption that the ratio of the cost for salaries of principals is the same in both grades. The principle on which the discrimination between the grades is made is no doubt correct; but the difference seems to be quite too much in favor of the grammar grade. A glance at the existing facts as to the number of pupils to a teacher in the New York system will make the matter still clearer. For convenience, only round numbers are used. The cost per pupil for 1882 in the grammar schools was $32 and the number of pupils to a teacher was about 33, the salaries averaging nearly $1,000 to a teacher. Now, if the number of pupils to a teacher had been 50, the salary to a teacher learning capability of the pupils, for the want of a wise and efficient direction.

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The theory of permanent tenure is as follows: Permanency of tenure would enormously increase the desirableness of the teacher's status; while it costs nothing to the public to grant this permanency, to the teacher it would be an inestimable boon; as a means of compensating teachers, it would be equivalent to a vast increase of school revenue; and the salary, even though raised to the highest practicable limit, when subject to the effect of short and precarious tenure, with all its train of evils, is insufficient to bring into the service of teaching and retain there the requisite talent. In substance, then, the question of permanent tenure of teachers is, in the first place, a question of economy, the question of conservation of forces; that is, the question whether the money compensation of teachers shall be, in effect, supplemented by what costs nothing. In the second place, it is a question of educational results, for salary plus permanent tenure is the indispensable condition of the ideal teaching corps, and hence the indispensable condition of the ideal school and the ideal education.

The reasoning on which this theory is based is extremely simple and is the following: (1) Permanency of situation everywhere and always counts largely with the salary in estimating the emolument of the situation, and it is self evident that these two elements together are greater than one of them alone; (2) the addition of permanency of tenure to salary is necessary to make teaching a career sufficiently attractive for persons of ability and culture as a life work; and it is only from such persons, devoted to teaching as a life work, that the best teaching can come.

This reasoning is the plain lesson of history, which he who runs may read. It is well known that the German states, and more especially Prussia, took the lead in the organization and development of the modern system of public instruction. And it appears that in Prussia, from the outset, the life tenure of office for the teachers was adopted as the first principle of the incipient system; and, in fact, the Prussians long ago expressly prohibited the appointment of any regular teacher for a determinate period. This was the original stalk upon which improvements were from time to time grafted, until at length its present vigor, completeness, and symmetry of development have been produced. Forty years ago Horace Mann thus characterized the teachers produced by this system: "As a body of men, their character is more enviable than that of any of the three so-called 'professions.'" In all the other European countries the point of departure and the process of development have been substantially the same. It is safe, I think, to say that in no one of them has it been thought expedient to attempt to carry on a system of schools on the plan of choosing teachers for a short, determinate period.

On the other hand, it seems to have everywhere been taken for granted that there could be no such thing as an efficient and economical school system without making provision for securing the services of teachers who should be devoted to the business of instruction as a life profession. Accordingly we find that although public school teachers have, perhaps, nowhere received entirely satisfactory treatment, they have generally been secure in their position and in their revenues, all too slender though they may have been. Thus the beginning was made by laying a foundation for a status of dignity and independence. This was all important as the initial provision. The rest followed logically, although not without delays and difficulties. Since it is the teacher that gives character to the school, as no well informed person will deny, we find that most of the measures of progress and improvement have been such as were calculated to ameliorate the condition and elevate the status of the teacher, to provide better professional training, to improve the scheme of examination and certificating of candidates, to increase the compensation, to secure a more competent and trustworthy superintendence and inspection, to afford the best means of appreciating and rewarding merit. These were the objects always uppermost in the aims and efforts of intelligent promoters of educational progress. And thus by degrees have been secured the conditions requisite to render teaching a veritable career; not a career, indeed, leading to wealth and luxury, but a career of assured independence, dignity, and support.

In our country the point of departure and the process of development have been quite different from those we have considered. We have undertaken to develop and build up an efficient system of instruction while acting on the assumption that the teacher cannot be recognized as having a claim to any ownership in a position of service.

In our system, therefore, there has been provided as yet no solid foundation upon which to build up a desirable status for the teacher; consequently little has been done to environ the teacher's office with the subsidiary guarantees requisite to constitute a career of teaching service. This condition of absolute insecurity and dependence in respect to position is necessarily compensated, in some degree, by the rate of salary. In fact, our system, instead of taking permanency of tenure as the point of departure from which to develop a competent teaching corps, in accordance with the opinion and practice prevailing in all other enlightened countries, has relied primarily and mainly upon compensation in money as the mainspring in the scheme for securing the desired teaching service.

I cannot help thinking that this uncertainty of tenure, this absolute dependence of teachers, both in respect to livelihood and reputation, upon the will of local committees, is the most serious defect in our school system. Reform in this particular is most urgently demanded; not that, as a matter of fact, teachers are displaced by wholesale when the annual election comes round, but because they are all liable to displacement by this process. The actual summary dismissals without just cause are not numerous, but even in the best managed city systems they occur with sufficient frequency to inspire too many of the teachers who are spared with a sense of humiliation and insecurity.

But the effect produced on the minds of the mass of teachers by unjustifiable removals through the machinery of the annual election—our barbarous school guillotine—is, perhaps, less pernicious and regrettable than the effect resulting from what is sometimes called the "blackballing" process. A teacher is said to be "blackballed" when he has failed to receive a full vote at the election. It is no uncommon thing for the best of masters to be elected by a small vote, for which no possible reason could be assigned except that they had some individual opinions with regard to educational matters. What could be more disheartening to a corps of teachers than such unjust treatment? Capable men hasten to quit a situation which exposes them to such humiliation. To render the permanent tenure effectual, it must be accompanied by a permanent, that is, an irreducible salary, as control of salary is virtually control of tenure.

We know what the objector to this plan will say: Your permanent tenure, with its irreducible salary, constitutes without doubt a desirable status for the teacher, providing the rate of salary is not too low. Whatever other tribulation may await the teacher, he has no longer any risks to run; he has no longer to submit to an annual humiliation in the shape of an annual election; his reputation and his living are no longer at the mercy of incompetent or prejudiced school officers; his status is invested with dignity and independence; he can hold up his head like a man and look the whole world in the face. But in all this what have you done but shift the risk from the employé to employer, from the teacher to the public? You have insured the teacher against risk, but what guarantee has the public that the teacher will do his duty when he has no longer the fear of losing his situation to act as a spur to effort? Are not the annual election and the power of summary dismissal necessary means of stimulating teachers to vigorous and sustained effort and of removing those who are delinquent and incompetent; and, besides, is not this permanency of tenure contrary to the spirit of our free institutions and too un-American to find favor with us?

To these questions, which embody the substance of all that can be said in favor of annual election and the power of summary dismissal, it may be said in reply: First, that the precarious tenure has not been found necessary for the end in view in any other enlightened country on the globe; and, second, in our own country the annual election is unknown outside of the public school system, so that this odious annual election has no place in the civilized world except in the public schools of the United States. But it is not denied that the public should be guaranteed against risk as well as the teacher. In the adjustment of compensation and service the relation of risks must always be taken into account. In this case the guarantee of the public against risk is perfectly feasible, as experience has satisfactorily proved.

This guarantee consists of six distinct provisions:

(1) A thorough professional training of teachers in normal schools, suited to their destined functions. This is necessary as the primary guarantee against the appointment of teachers without the requisite qualifications. And it is evident that the State could afford a more liberal expenditure for the education of a teacher who is to serve the public thirty or forty years than for the teacher who is to serve only three or four years. Only a small fraction of the teachers now engaged in the service are graduates of normal schools, there being no one State that has not recoiled before the task of securing to the whole body of teachers a professional education; and this is because of the very great number of teachers which teaching as a temporary employment necessitates.

(2) Another guarantee should be provided by a system of examining and certificating teachers by experts wholly under the control of the central authorities; besides, the local certificate, the only one, with few exceptions now issued, does little for the establishment of the standing and reputation of the holder. But a certificate granted by the central authority, and valid throughout the State, would create a professional rank and standing which would elevate the status of the holders.

(3) As a third condition requisite to the permanent tenure, probationary service must be provided for. The candidate must not only have his certificate, but he must prove his capacity by actual service in teaching before he can claim a definitive appointment. The period of probation should not be less than two years and it might well be three or four. The judgment on the result should be rendered by one or more approved experts. If a further guarantee against failure is deemed expedient, it may be obtained by an examination at the end of probation, bearing especially on the practical work of the school room.

(4) As to the choice to be made among candidates thus prepared, the most judicious method appears to be for the superior school authority to nominate three or four candidates, having regard both to seniority and merit, and that the selection from this list should be left to the local committee.

(5) Provision for a suitable hierarchical situation for the teacher. Such a situation would comprise a competent supervision and the other means requisite for stimulating the teacher to the best efforts, by recognizing his worth and rewarding his merits; and such a situation would also comprise the necessary machinery for administering just and

salutary discipline in cases of delinquency. In France the hierarchical situation is so well contrived that the young man of talent, entering upon his career as primary teacher in the remotest mountain hamlet, may hope to reach, by well earned promotions, the principalship of a metropolitan school or to become director of a normal school or even inspector.

"It is the function of a good administration," says the eminent Belgian publicist and educator, Émile de Laveleye, "to seek by fixed rules, which science indicates, to ascertain merit and to class individuals according to their aptitudes; then there would be an end of solicitations, of subserviency, of intrigues, of protections, of favors, of injustices." And this is the paradise for which the teacher prays. He wants to feel that he owes his position to his merit, and not to favor, and to be sure that his efforts will be appreciated and recompensed. It is, perhaps, in vain to hope that the public school teacher's pathway may be strewn with roses; hitherto it has been too much hedged up with briers and thorns: but the supreme misery of his lot is to be judged by incompetents. This would necessarily be mitigated by the better supervision which the permanent tenure would require.

(6) A retiring pension is requisite, not only as a security for old age, but as a means of rendering practicable the retirement of the aged and fatigued public servant without reflecting on his reputation or abandoning him to destitution.

These six conditions are logically involved in the full and complete application of the principle of fixity of tenure. Moreover, they are at the same time the means of producing an equilibrium of risks and authorities which experience has proved to be indispensable to the most efficient, economical, and harmonious working of a school system.

In every point of view this reform in our system seems to me fundamental in its importance; all others are but secondary, subordinate, accessary. It may seem to the timid to be a bold undertaking, but it is not more bold in the present circumstances than the project of State normal schools or the project of a State board of education fifty years ago. Every epoch has its peculiar tasks. This reform I verily believe to be the task of the hour for the friends of educational progress. Public sentiment is now everywhere drifting in this direction. In the powerful movement which has been begun to reform the civil service I see plainly the dawning of a new and better day for the public school and the public school teacher. The press is daily teeming with arguments for this cause, for the principles of a good civil service are essentially the same as the principles of a good educational service. Hence the achievement of the civil service reform will prepare the way for this reform. The spoils system and the annual election are twin barbarisms, and with the abolition of the former the latter must go.

But permanent tenure is not to be brought into successful operation by a single legislative act. This radical reform must be reached by a series of steps. Initiatory steps have already been taken in various quarters. It is worthy of mention that, at a late session of the Massachusetts legislature (1874), the chairman of the committee on public service offered to include the teaching service in the provision of the civil service reform bill reported by this committee.[1] This reform must begin practically in the cities and larger towns. Teachers have their duty in connection with this task. Everywhere they should pour in their petitions and memorials upon the legislatures, throughout the country, and do their share of the work in creating public opinion which shall demand this reform.

To our metropolitan city belongs the credit of taking the lead, and of setting a good example to cities of less importance, in respect to the reform in the tenure of office of teachers. In New York the position of the public school teachers is reasonably secure. This security is provided for in the law creating a department of public instruction for the city and county of New York. In the first place, teachers are elected once for all, presumably to serve during efficiency and good behavior. There is no recurrence of election whatever. The barbarism of annual election is utterly unknown in the system. There are three modes of removing teachers: (1) By the board of education, upon recommendation for cause by the city superintendent, or a majority of the trustees for the ward, or a majority of inspectors for the district; but not without a three-quarters vote. (2) The board of trustees for the ward, by the vote of a majority of the whole number of trustees in office, may remove teachers, other than principals and vice principals, provided the removal is approved in writing by a majority of the inspectors of the district; but the teacher so removed has the right of appeal to the board of education, and may be reinstated if the board so decides. (3) By revocation of license by the city superintendent, for cause affecting morality or competency, and the written concurrence of two of the inspectors of the district in which the teacher is employed, the teacher having the right of appeal to the State superintendent and the revocation taking effect only after the confirmation of the State superintendent. In short, the principle of fixity of tenure is fully recognized in the New York system. There is no such thing as summary dismissal or arbitrary removal. The teacher once appointed is not subject to removal except for cause touching his morality or competence, upon charge of responsible officers and sustained by competent evidence. And thus the fundamental requisite for a good status for the teacher has been provided.

On the other hand, in the Boston school system, the oldest in the country and that which has been most commonly ranked with New York as a representative system, the teachers hold their position by a tenure as insecure as it can well be made. In the infancy of the system the famous Master Cheever was inducted into the office of principal of the Latin School with much pomp and ceremony. He had come to stay; and he did stay until "time took him off," after he had got well into the nineties. He had probablv never heard of the absurdity of electing schoolmasters annually; but in an evil day some shortsighted reformer introduced this bungling contrivance of getting rid of incompetent teachers, and, as time has gone on, the condition of teachers in respect to security of position has grown worse instead of better. There is nowhere, either in statutory provision or in the by-laws and regulations ordained by the school board, any recognition of the principle that the teacher has any right to continuance in the service, no matter how unexceptional in conduct or capability. Every principal is liable to be dropped from the service at the end of the year unless he obtains the votes of a majority of the whole number of members of the board, this majority being the legal quorum. Hence, the loss of a single vote would cost the master his place, if there happened to be only a quorum present at the time of voting. The case of the subordinate teachers is still worse. Unless nominated to the board by the majority of their district committees, their reëlection is not even considered by the board. In fact, no teacher is accorded the right of being notified of any intention to drop him from the service, and, when dropped, has no redress, not even the poor satisfaction of being informed for what cause he has been deprived of his means of livelihood.

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[1] At the present session of the Massachusetts legislature, January, 1885, a bill has been introduced providing for a more permanent tenure of office for teachers.

This precariousness of tenure has been aggravated and rendered less endurable by the system of supervision inaugurated by the supervisors, described in another part of this report.

Reform of this feature of the system, which has been so discouraging and demoralizing to the teachers, has of late been considerably agitated, and it is to be hoped that the time is not distant when not only in the Boston system, but throughout our city systems generally, teachers will be made secure in their situations during efficiency and good behavior.

The cities of Brooklyn, Jersey City, and Newark are reported as having taken the advanced position, by the side of New York, in reforming the tenure of office of teachers. The superintendent of Jersey City, Mr. George H. Barton, writes as follows:

> Teachers once appointed in this city hold office during the will of the board or during good behavior. One or two principals have held their positions for thirty years. Teachers can only be removed for cause after a fair trial.

Superintendent William N. Barringer, of Newark, says:

> Our teachers are all appointed during good behavior and cannot be dismissed except for good cause. We settle them for life.

EXAMINING AND CERTIFICATING OF TEACHERS.

The object in view in the examination of teachers is to exclude the incompetent from the teaching service, leaving the door open only to teachers who are capable and devoted to their chosen calling. It is of the utmost importance for the encouragement and improvement of the profession of teaching that every practicable means should be employed to secure to capacity and merit their just recognition and reward, and that provision should be made for the fairest competition between candidates for responsible and lucrative positions. This is what a good system of examinations is designed to accomplish.

With some exceptions, the school board of each city is responsible for the character of the examination which tests the qualifications of the teachers whom it appoints. Hence in these examinations there is no such thing as uniformity, either with respect to standard or method. While the certificate of qualification granted by one school board may be well-nigh worthless as evidence of fitness and capacity, the certificate given by another board in the same State and neighborhood may be safely taken as reliable evidence of the holder's competence.

In a few States provision exists for State certificates of qualification of different grades, awarded by a State board of examiners. The State certificates in such States are valid in the cities thereof. It is a curious fact that the lead was taken, in providing good systems of examining and certificating teachers, in some of the newer States, and notably in California. In the State just mentioned a good system was provided nearly twenty years ago, through the agency of the very able State superintendent,[1] both for country and city schools, while at the same time, in the State where the common school system had its origin, it could not be said that there was any such thing as a good system of examining teachers, either for city or rural schools, the statute on the subject simply prescribing that teachers must be examined by a local committee in order to be entitled to payment for service. In every city in the State of California, having a board of education governed by special laws, it was provided that there should be a board for determining the qualifications of teachers, to consist of the city superintendent, the president of the board of education, the county superintendent of the county in which the city is situated, and three public school teachers, residents of such city, who are elected by the board of education for one year. This board was empowered to grant the following grades of certificates, namely: (1) "Educational diplomas," valid for six years; (2) certificates of the first grade, valid for four years; (3) certificates of the second grade, valid for two years; and (4) certificates of the third grade, valid for one year. These certificates were valid only in the city in which they were granted.

At the present time the State of Ohio stands among the most advanced States, if not, indeed, as the foremost, in respect to statutory provisions for examining and certificating teachers. In this State the law provides for State, county, and city boards of examiners and prescribes their duties and powers in detail. The legal provision for boards of examiners of teachers in the cities of the State of Ohio is as follows:

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[1] Hon. John Swett, the actual principal of the City Normal School, San Francisco.

> There shall be a board of examiners for each city district of the first class, to be appointed by the board of education of the district [city]. Such board may consist of either three, six, or nine persons, as the board of education may determine, and the persons appointed shall be competent for the position and residents of the district for which they are appointed The term of office of such examiners shall be three years.

The board shall organize by choosing from its members a president and a clerk, and, to secure a thorough examination of applicants in difficult branches or special studies, the board may secure the assistance, temporarily, of persons of sufficient knowledge in such branches or studies. The board may grant certificates for one, two, three, five, and ten years, which shall be signed by the president and attested by the clerk and shall be valid within the district wherein they were issued; and such certificates issued for five and ten years, if in part on account of consecutive years of teaching and experience, shall be renewable, without reëxamination, at the discretion of the examining board. Certificates so granted may be revoked for cause by the board of education.

Under the provision of this law the actual board of examiners of the city of Cincinnati consists of nine members, of which the superintendent of schools is a member and the president. Quite contrary to the spirit of the California school law, which provides that the city board of examiners shall comprise three teachers, by a seemingly preposterous rulĕ of the Cincinnati school board, no teacher, either public or private, can be an examiner. The board holds examinations on the second Thursday of June, October, December, February, and April of each year, continuing them until finished.

> The board grants five grades of certificates, denominated, respectively, male high school certificates, female high school certificates, principal's certificates, assistant's certificates, and special certificates to teachers of the special branches—foreign languages, music, drawing, penmanship, and book-keeping— which last shall require an examination also in the branches required by law.

Considering that the Cincinnati system of examining and certificating teachers is so exceptionally elaborate and complete, I deem it desirable to introduce here, for the sake of comparison, the following rules and regulations of the board of examiners:

> *Subjects.*— (1) Theory and practice of teaching; (2) spelling and definitions; (3) reading: (4) grammar; (5) penmanship; (6) mental arithmetic; (7) written arithmetic; (8) geography; (9) American history; (10) ancient and modern history; (11) natural philosophy; (12) elements of anatomy and physiology; (13) English or German literature; (14) music or drawing; (15) chemistry; (16) algebra; (17) geometry; (18) astronomy; (19) Constitution of the United States; (20) comparative anatomy.
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> Candidates for a male high school certificate are examined in the first nineteen of the above subjects and such other branches as they may be required to teach. Principals of high schools will also be examined in the last branch above named.

Candidates for a female high school certificate are examined in the first sixteen of the above subjects and such other branches as they may be required to teach.

Candidates for a principal's certificate are examined in the first nineteen of the above subjects.

Candidates for an assistant's certificate are examined in the first fourteen of the above subjects.

Candidates for German certificates, who have been educated in the public schools of Cincinnati, shall be required to pass examinations in mental arithmetic, written arithmetic, and geography, before the English examiners.

Special teachers are examined in the branches which they propose to teach, in which they must have at least nine, ten being the maximum, and in the theory and practice of teaching in the English language, unless the board shall otherwise direct.

The number opposite to each branch in the column on the right of the list of the studies on the certificates issued measures the result of the examination, ten being the maximum. Less than seven in either German, grammar, geography, written arithmetic, mental arithmetic, or spelling is a failure. Certificates are valued as follows: For an average of 70 per cent. of correct answers, two years; 80 per cent., five years; 90 per cent., ten years. No person, however, shall receive a certificate for ten years who has not had two years' experience in teaching graded schools. The first certificate granted shall in no case be for a longer term than two years.

No certificate shall be issued without an average of 70 per cent. of the full number of marks.

The board will grant no certificate to any candidate who entirely fails in any branch of study in which an examination is required.

A record of the character of the examination of each individual is preserved in a book kept in the office of the board of education.

Candidates who have not taught in the public schools of Cincinnati must leave with the clerk of the board, at least three days before the regular meeting, a certificate of good moral character, together with legal fee, fifty cents, and a declaration that they are eighteen years of age (or seventeen, if graduates from the high schools or with similar attainments) and that they design to teach in the public schools of Cincinnati, if found qualified. Candidates are requested to leave their address and a statement of any experience they may have had in teaching.

Candidates for high school certificates are required to file their applications with the clerk of this board at least one month before the time of examination, in which application all the branches which they may be required to teach must be named, and the certificate granted shall be valid for those branches only in which the candidate has received at least eight.

All candidates for high school certificates must be examined in all the subjects required for such certificate, except as provided in Rule 14 of the school board.

Candidates shall be examined in the absence of all spectators, save the members of the board of education.

Examinations shall be held only at the time designated in section 2. Candidates shall not be examined who are not present punctually at the appointed hour. No candidate who has failed in more than one branch shall be admitted to a second examination till after the expiration of six months. A candidate who has failed in one branch only shall not be reëxamined within six months, unless such candidate has an average of eight in other branches. Such candidate must pay the legal fee and be reëxamined in all branches in which the previous mark was less than eight.

Reëxamination.—Any candidate for reëxamination who may be employed in the city schools shall file with the clerk of the board an application for such reëxamination, accompanied by the previous certificate, at the regular meeting, four months preceding that at which the candidate proposes to be examined. Principals desiring to be examined shall give six months' notice. All candidates for reëxamination for the high schools, of five years' experience, who shall present high testimonials of merit and success shall be examined in those branches only which they are expected to teach.

The district, intermediate, and high schools shall be divided into districts, and a committee of two members of this board appointed for each district, whose duty it shall be to visit the schools in their respective divisions for the purpose of examining and reporting upon the management and method of instruction of the candidates for reëxamination. From the certificate last granted by the board and the report of the visiting committee, the board shall determine the character of the reëxamination to be required of each applicant, and the candidate shall be notified thereof two months previous to the time of such examination: *Provided*, That candidates shall be required to undergo an examination in all those branches in which they are marked less than seven. A teacher whose certificate has expired, and who has not been engaged in teaching in the public schools of Cincinnati within two years next preceding the date of his or her application, must be examined in all the branches required by the rules.

The grade of certificate shall be determined by the average of the candidate in all branches required, including theory and practice of teaching: *Provided*, That no candidate shall receive a certificate for ten years who shall fall below nine in "theory and practice;" nor for five years, if the candidate fall below eight in the same subject: *And provided further*, That no certificate shall issue to a candidate falling below seven in "theory and practice."

No candidate shall receive a two-year certificate more than twice.

All German teachers who have been employed in our schools for three years or more shall be examined in English grammar, reading, spelling, and definitions.

Any teacher who shall engage in teaching any branch of instruction in which he or she has not been examined, and after having received three months' notice shall persist in so doing, shall be deemed guilty of improper conduct and shall be dismissed by this board.

Any proposed change in the foregoing rules shall be presented in writing and shall lie over until the next regular meeting, and every member shall be notified of the proposed change within one week after its presentation. A vote of two-thirds of the members present shall be necessary to change any rule of the board.

This system has without doubt many merits and it is well worth the study of the school officers of other cities. But there seems to be no good reason why certificates of the first and second class, requiring high percentages of correct answers, should be valid only for a limited period when the holders thereof are in continuous service. Again, a fixed rule as to the percentages requisite for a certificate would seem to be of doubtful expediency, as it is impossible to provide by a regulation for a uniformity in the character of the papers set.

Among the cities of the first class, Boston has been conspicuous for its lack of a good system for examining candidates for teachers.

Eight years ago this function was committed to the board of supervisors. The plan adopted by this board comprised a very wide range of topics; and failure to obtain a high percentage in any of these by a candidate deprived him of a certificate. Even the candidates for the certificate requisite for the head mastership of a high school were required to be examined in the details of a wide range of subjects which the most scholarly teachers seldom retain in memory long after passing through the school and college. The consequence was that teachers of high standing, which had been reached by years of successful experience, precisely the description of candidates wanted, and those that were anxious for a fair chance to show their fitness for the lucrative positions to be filled, did not present themselves for examination. They could not afford to run such risks of a failure to obtain a certificate. Hence the candidates were mostly persons fresh from the school or college, or unsuccessful adventurers who were glad of a chance to run for luck. As might have been expected, the lists of certificated candidates seldom bore the names of teachers such as were wanted for the more important places, and never those deemed competent for the highest posts.

After the inauguration of this system, a head master of a high school being wanted, extensive search was made for a suitable candidate. A man of high reputation and undoubted scholarship was found. The place suited him; the salary was $4,000; but he had not the certificate of qualification which the regulations required and he refused absolutely to take the examination for it, frankly owning that he could not pass it. So the school board ordered the supervisors to grant the certificate on the strength of the curriculum vitæ and testimonials of the candidate, after a makebelieve oral examination.

Of the many similar cases which might be cited in illustration of the unhappy operation of this injudicious system, one more must suffice.

In an examination of candidates for the principalship of evening elementary schools, a position which required no teaching whatever and the supervision of the teaching of nothing beyond the three R's, there happened to be a candidate who had fitted for college in a school of the first order, had graduated at Harvard with high rank, and had passed through a three-year course at a German university, gaining the degree of doctor of laws. This gentleman was deemed to have failed to come up to the required standard of scholarship because he failed to solve satisfactorily some of the problems in the algebra paper.

Since that time the plan of examination has been somewhat modified in the right direction, though in its essentials it remains the same. In the mean time, as a partial remedy for its defects, the school board has made the following rather cumbersome provision:

> If a vacancy exist in a subordinate position in any school and it is desirable, in the opinion of the committee in charge, to procure the services of some instructor who has not been examined as required, application shall be made to the committee on examinations, who, if they approve the purpose, may invite a member of the board and direct a supervisor or the principal to examine and inquire into the qualifications of the proposed candidate, and, if he is employed in teaching, to visit his school at the expense of the city. Upon a favorable report, in writing, approved by the committee on examinations, the board of supervisors shall especially examine the candidate,[1] who, if qualified, shall receive the usual certificate.

The regular examination is held only once a year and applicants are not admitted unless they have had one year's experience in teaching or have graduated from some normal school within the State. The grades of certificates are as follows:

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[1] That is, the examination is to be adapted to the circumstances of the case.

First grade, to head masters, masters, and junior masters of the normal and high schools and principals of evening high schools; second grade, to masters and submasters of grammar schools, principals of evening elementary schools, and assistants of evening high schools; third grade, to assistant principals and assistants of normal and high schools; fourth grade, to assistants of grammar, primary, and evening elementary schools; special grade, to instructors in special studies and in schools for the deaf and licensed minors.

These certificates are, very properly, valid within the city for an indeterminate period.

In general, the examination of teachers is conducted by a standing committee of the school board, with the assistance and coöperation of the superintendent. In some important cities, this examining committee leaves the business of examining mainly to the superintendent. In New York and some other cities, the examining and certificating of teachers are almost exclusively in the hands of the superintendent.

Is it not possible that a scheme of examination well calculated to keep ignoramuses out of the teaching profession may not be equally well calculated to do justice to candidates of the highest order? In the existing scheme of examination in the system of the District of Columbia the device for solving this problem is worthy of notice. This device consists in providing that the examination and certificate for situations above the eighth grade shall be special, which means, it is presumed, that the examination is not to be conducted in conformity with the general rules relating to the matter, but shall be adapted to each individual case. The system of examination in the District of Columbia has some other features which are somewhat peculiar. This board of examiners, which consists of the two superintendents and such other members as may be appointed by the school board from the supervising principals and principals of schools, is divided into two sections, designated as *first* and *second*. The *first*, comprising the two superintendents and one other examiner, prepares the questions and superintends the examination, while the members of the second, who are not permitted to be present while the examination is going on, are charged with the duty of examining and marking the papers of the candidates. The results thus obtained are reported to the committee on teachers, while the oral examination is made and reported on by the first section. It is the duty of the committee on teachers to examine these results and to report to the school board the names of the candidates whom they deem worthy of certificates and the class of certificates to which they may be thought severally entitled, together with any other facts deemed necessary or that may be called for. And finally, the school board, with such information in their possession, determines what candidates may receive certificates and the class of such certificates. The candidates are known only by numbers till the question of certificate is decided.

Of this unique system of examination, the annual report for 1880 remarked as follows:

> The most important act of the board of trustees since its organization, August 2, 1878, was the adoption of amendments to Articles IV and V of the by-laws. These amendments consisted of a series of provisions and safeguards thrown around the examinations of applicants for teacherships and promotions. They were prepared by Charles E. Hovey, esq., of the old board of trustees, and, in addition to providing a philosophical and uniform rule for examination of candidates, they secured impartiality on the part of the examiners, independence on the part of the trustees, and provided scholarship as a basis of admission as an instructor, leaving to time—the only test—to determine respecting the possession of those other essential qualifications whose possession or want trial alone can discern.
>
> The amendments have been an impassable barrier to the entrance into the profession of teacher of many applicants who, together with their friends, regard public schools as an asylum for the maintenance of such as have more influence than means, more friends than abilities. * * *
>
> The board can congratulate itself upon the possession of a method of examination which not only secures the strictest impartiality, but leaves no room for suspicion upon the part of the class of chronic fault finders that infest every school community.

It may readily be admitted that this plan is well calculated to guard against partiality, but it seems to make no provision for considering any evidence of competency other than the marking by the examiners of the results of the examination in the prescribed branches of study, such as successful experience in teaching, courses of education passed through, testimonials of scholarship received, &c.

The system of examination and certificating of teachers which has been in operation in the city of Denver for a number of years being peculiar in some of its features and being known to me to have worked very successfully, a description of it is here introduced.

It is made the duty of the committee on teachers, consisting of two members, to examine or cause to be examined all applicants for positions as teachers. It is made the duty of the superintendent to assist in conducting examinations of applicants for positions as teachers and to issue certificates as provided by law under the direction of the board. The examination is both oral and written and embraces reading, spelling, English grammar, physical and descriptive geography, arithmetic, elements of algebra, United States history, English literature, elements of vocal music, and methods and theory of teaching.

The certificates are not graded and they are granted for an indeterminate period.

> On an appointed day all who wish to obtain a certificate to teach in our schools present themselves as a class. No preliminaries previous to this time are necessary. The following instructions are given to them:
>
> "DIRECTIONS TO CANDIDATES.
>
> "At the beginning of the examination an envelope, with a number written thereon, will be handed you. You will be known during the examination not by your name but by the number on your envelope.

"Write on a slip of paper your number, name in full, and present address; inclose the slip in a numbered envelope and seal the envelope.

"At the head of every sheet and separate half sheet of paper used at this examination write your number and the subject. Place before the answers the same figures that are before the questions."

Having taken this precation to have the examination impersonal, questions on the branches required are submitted to the candidates and written answers obtained. These written papers are overlooked and ranked as is the custom in all written examinations. The average standing of the individual obtained from all the papers is recorded as the scholarship standing.

Each person (number) whose scholarship standing has been found satisfactory is asked to remain for a personal interview with the committee and such members of the board as can be present. This interview lasts from twenty to thirty minutes, during which time the candidate presents evidence of good moral character, and takes part in conversation relative to her history, experience, and success, and answers questions propounded by the superintendent on theory of teaching.

At the close of the interview, the candidate having withdrawn, each member of the board present rates the ability of the candidate on a scale of ten, each member stating in figures his estimate of the candidate's fitness for work in our schools. The average of this ranking by members of the board is the candidate's standing in oral examination.

The average of the scholarship standing and of the oral examination standing is the final rank of the candidate. When each member of the class has passed a like examination, the individual standing of each is set opposite the appropriate number and the board elect what numbers shall receive certificates to teach in our schools. Then the sealed envelopes are opened and the names of the candidates learned. From those holding certificates, teachers are elected in the order of their rank at examination.[1]

This system, it will be seen, is like that of the District of Columbia in reserving the awarding of certificates in the hands of the school board, while it differs from it widely in making much of evidence of qualification other than that of scholarship ascertained by the examination, and it affords a good safeguard against favoritism in the appointments. It is also in effect a competitive examination for appointment as well as a general examination for a certificate.

A general survey of this element of our city systems leads to the conclusion that, on the whole, it is far from being all that could be desired. This subject deserves far more attention than it has received from our leading educators. It is obviously a delicate subject for the discussion of superintendents in their reports; and hence, if referred to by them at all, it is for the most part referred to in a perfunctory or timid manner. We have much to learn in this regard from those countries where civil service and educational service examinations have been far more scientifically treated than with us. The administrators of our city systems might study with profit the examination scheme of the civil service in England. In France, the examination of pupils and teachers, both general and competitive, has been reduced to almost an exact science. Our examinations for principals and teachers in high schools are especially lame and inadequate. Examinations of teachers for certificates ought to be in the hands of the State authorities. Local boards or municipal boards might be allowed to institute competitive examinations of certificated teachers for appointment to particular situations, such examinations having reference rather to skill and capacity than to scholastic attainments.

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[1] From report for 1883 by P. Gotteslehen and Frank Church, committee on teachers.

PREPONDERANCE OF FEMALE TEACHERS.

One of the most notable characteristics of our school system is the overwhelming preponderance of female teachers. So great is this preponderance that it would probably be not far from the truth to say that the cities where male teachers are employed in elementary schools, in any other capacity than that of principals or as teachers of special subjects, such as German, for example, may be reckoned as the exceptions. In the high schools, the proportion of male teachers is much larger than in those of the elementary grades. In the mixed high schools, especially in the larger cities, the number of male teachers is, perhaps, nearly equal to that of the female teachers. Where the high schools are unmixed, those for boys are taught by male teachers, while the schools for girls are taught mostly by female teachers, under the direction of a male principal. The following tables exhibit the proportion of male to female teachers in twenty-four representative cities:

Table showing the proportion of male to female teachers in ten cities of the first class.

Name.	Number of teachers.	Number of male teachers.	Number of female. teachers.	Percentage of male teachers.	Ratio of males to females.
Baltimore	855	83	772	10	1 to 9.3
Boston	1,118	122	996	11	1 to 8.2
Brooklyn	1,355	64	1,291	5	1 to 20.2
Chicago	1,107	45	1,062	4	1 to 23.6
Cincinnati	659	128	531	19	1 to 4.1
New Orleans	402	23	379	6	1 to 16.5
New York	3,351	452	2,899	13	1 to 6.4
Philadelphia	2,168	82	2,086	4	1 to 25.4
San Francisco	687	63	624	9	1 to 9.9
St. Louis	1,017	117	900	12	1 to 7.7
Total	12,719	1,179	11,540	9	1 to 9.9

Table showing the proportion of male to female teachers in fourteen representative cities.

Name.	Whole number of teachers.	Number of male teachers.	Number of female teachers.	Percentage of male teachers.	Ratio of males to females.
Columbus, Ohio	156	14	142	9	1 to 10.2
Indianapolis	233	18	215	8	1 to 11.9
Kansas City	87	9	78	10	1 to 8.7
Little Rock	33	5	28	17	1 to 5.6
Memphis	65	8	57	12	1 to 7.1
Milwaukee	295	48	247	16	1 to 5.1
Newark	319	27	292	8	1 to 10.8
Pittsburgh	467	50	417	2	1 to 8.3
Portland, Me	127	9	118	7	1 to 13.1
Portland, Oreg	72	6	66	8	1 to 11
Providence	321	19	302	6	1 to 15.9
New Haven	261	18	243	7	1 to 13.5
Cleveland	490	23	467	5	1 to 20.3
Denver	106	9	97	8	1 to 10.7
Total	3,032	263	2,799	9	1 to 10.6

It will be seen by the above tables that the average proportion of male teachers to female teachers in the twenty-four cities represented is about 1 to 10. The average of all the cities taken together would probably vary not far from this showing. Philadelphia has the lowest proportion of male teachers, but the male teachers employed are actually engaged in teaching, each one of these, except the high school teachers, being confined to the care and instruction of the upper class of a boys' grammar school and having supervision over a very limited number of lower classes. The next lowest proportion is found in Chicago. In this city there are, in fact, in the elementary schools no male teachers, properly so called. The men reckoned as teachers are, in reality, supervising principals, each having a large number of classes and teachers under his direction and supervision. It will be seen that in Cincinnati the proportion of male teachers is about six times as great as that of Philadelphia and Chicago. This is the result of the policy of employing to some extent male assistants in the elementary schools. This is the case in the other large cities, where the proportion is comparatively high, namely, Milwaukee, New York, St. Louis, and Boston. In Milwaukee there are several male principals of primary schools, as well as some subordinate male teachers of district schools, and, in addition, a number of special male teachers of the German language; and hence the high ratio of male teachers as compared with other cities. In some cases ladies are employed as principals of large mixed schools composed of grammar and primary grades. In Cleveland the experiment was made several years ago of placing all the elementary schools in charge of female principals, three or four general supervising male principals being employed to visit the schools at short intervals to give assistance where needed in the discipline and management. On the other hand, in Boston the girls' grammar schools have, with one exception, always been in charge of male principals.

Speaking of this peculiarity of our system, Mr. Francis Adams, of England, in his excellent work on the American free school system, remarks as follows:

> The large preponderance of female teachers in the States will always render the occupation of teacher more or less a temporary one. As a matter quite of course, women do not look to teaching as a lifelong career. In England scarce one in twenty of the female teachers reaches her tenth year of service. Of the female teachers trained at Bishop's Stortford, it has been ascertained that their average school life was under five years. The proportion of female teachers in America is ten times greater than in England. Female teachers may have other advantages over males, and in the United States are generally conceded to have, but the length of their school life is not one of them.

Bishop Fraser, in his well known and highly valuable Report on the Common School System in the United States, which was published nearly twenty years ago, uses the following language in relation to this matter:

> The vast majority of the teachers are females and most of them very young females. * * * There is a strong preference in the United States for the employment of females as teachers, chiefly on the score of superior cheapness, but also, in the estimation of many, on the ground of superior efficiency.

He, however, placed a high estimate upon the natural capacity of these ladies for teaching.

M. Buisson, in his report on our public schools, says:

> The teaching corps counts a large proportion of female teachers; the married instructresses are sufficiently rare; classes of boys of every age are intrusted to female teachers.

From the same document, other remarks relating to this topic have been quoted under the head "Tenure of office of teachers."

Some years back, it was quite common for State superintendents of schools, in their reports, to mention as a matter of congratulation and as evidence of progress the increasing proportion of the female teachers; but there seems to have been a turn in the tide. The question is coming to be discussed in more than one place whether the displacement of male teachers has not been carried too far for the best interests of our schools.

In 1873, the annual report of the Massachusetts board of education contained the following remarks on this topic:

> It appears that, of the persons employed as teachers, one-eighth were males and seven-eighths females, the decrease of males for the year being 25, while the increase of females was 233. For upwards of thirty years this process of diminution in the number of male teachers and increase in the number of female teachers has been going on. During past years the board and their secretaries have frequently referred with approbation to the substitution of female for male teachers in our schools as a movement in the direction of progress. But the time must come, if it has not actually arrived, when it will be necessary to consider seriously whether the best inter-

ests of education do not require some limitation to this movement. If it be true, as most persons will probably admit, that females have superior aptitude for certain departments and situations in teaching and disciplining, is it not equally true that males have superior aptitude for other departments and situations?

The want of success, whether in respect to male or female teachers, taken in the mass, is due not so much to the want of natural aptitude as to want of special preparation and of adequate experience. The great obstacle to the acquirement of the needed experience on the part of females is in the shortness of the period of their service, and this again is the reason why they do not make a more thorough preparation for the work.

It is a noticeable fact that during the decade that has elapsed since the above suggestions were published by the board of education there has been no further increase in the proportion of female teachers employed in the public schools of the State, while previously there had been a constant increase from year to year for upwards of thirty years.

Of late years this subject has been considerably discussed in the New England Association of School Superintendents, and this body has expressed its opinion emphatically in favor of the employment of a larger proportion of male teachers.

There is, without doubt, a growing conviction among our prominent educators that a very considerable increase in the proportion of male teachers is a needed reform in our school economy. It is argued that teaching as a career—as a life work—is a necessary condition of the best results of teaching. With women, teaching is a temporary occupation, and this must be the case so long as they are required by social customs and sentiments to retire from the service as soon as they are married. The only effectual remedy, therefore, for the defects and imperfections inseparable from teaching pursued as a temporary occupation, as a makeshift, is the employment of a larger proportion of male teachers who shall devote themselves to the profession as a life work after having made the requisite preparation therefor and given satisfactory proof of competence. But a larger proportion of male teachers is desirable, not merely as a means of realizing the advantages of experience in teaching and that efficiency which comes from teaching as the one aim of life; it is desirable also because the instruction and training of boys above ten or eleven years of age requires the handling of a master rather than that of a mistress. It has been asserted by some who claim for women superiority over men in respect to aptitude for teaching that insufficiency of salary accounts largely for their non-continuance in the occupation of teaching. Experience, however, does not justify this assertion. In some quarters it has been claimed that the salaries of teachers of the same grade should be equal, without regard to sex. It is, however, a principle tolerably well recognized in pedagogy that, where the salaries of the sexes are equalized and the rate is high, the men displace the women, and where the rate is low the reverse happens: the women displace the men.

EXAMINATION OF SCHOOLS.

In considering this subject it seems desirable to define at the outset what is meant by an *examination* of schools, as distinguished from what is meant by an *inspection* of schools.

An inspection is a visitation for the purpose of observation, of oversight, of superintendence. Its aim is to discover, to a greater or less extent, the tone and spirit of the school, the conduct and application of the pupils, the management and methods of the teacher, and the fitness and condition of the premises. Good inspection commends excellences, gently indicates faults, defects, and errors, and suggests improvements as occasion requires. By the expectation of visits of inspection of the right sort, teachers are stimulated to fidelity and to efforts for advancement in efficiency. While inspection has for its object, in some measure, to stimulate, encourage, and guide both teachers and pupils, this is not the limit of its scope. It has another important purpose, namely, that of enabling the inspector to acquire valuable information as a basis for action in the administration of the system. But inspection does not undertake to apply tests to teachers or pupils, to be followed by serious sanctions. Its object is general rather than special. It is best that inspections should be made without previous notice and that they should be made by competent and experienced experts; but inspection by intelligent and judicious non-experts may be highly beneficial. The principals of schools should frequently inspect the classes for which they are responsible; the superintendent should, as often as practicable, inspect all the schools under his charge; and, of course, inspection is one of the duties of school committees.

An examination is different from an inspection, both in its aims and methods. An examination is a thorough scrutiny and investigation, in regard to certain definitely determined matters, for a specific purpose. It should proceed according to a prearranged scheme and it should not omit any element in the scheme. It seeks positive evidence and exact information in regard to all the matters comprised within its scope. Nor is this all. An examination not only implies the acquisition of facts within a prescribed sphere, but it also implies a weighing and considering of those facts and the making of a judgment upon them. The object of the examination is to arrive at a just estimate of merit or attainments or progress. This judgment, or estimate, then, constitutes the essence of examination, for it is the basis of awards which are of the highest importance to both teachers and pupils.

All examinations affect more or less both teachers and pupils; but, considered with reference to the chief objects to be accomplished, examinations of schools and classes are of the three following kinds:

I. Examination of classes, to ascertain their progress and to determine the rank of the pupils composing the class.

II. Examination of pupils for promotion, for graduation, and for distinctions or honors.

III. Examinations of schools and classes with reference, mainly, to the merit and standing of the teachers.

As the objects of these examinations differ, so must their methods differ, and they must be conducted by different classes of examiners. The general principle as to the qualifications of the examiner is that he should be competent and disinterested as to the result. He should know what facts to seek; he should be capable of estimating them at their true value; and, above all, he should have no relation of interest or feeling to warp his judgment.

I proceed to consider the three kinds of examination in the order above named:

I. The examination of pupils, to test their progress or to determine their rank, which I call class examination, has been of late quite extensively adopted, and in many places it appears to have been pushed to an injudicious extreme. This examination should be conducted by the class teacher, but under the supervision of the principal. If the examination is to be merely a test of progress, it may be, and, indeed, should be, both written and oral; but, if it is to determine rank, it becomes essentially a competitive examination, and must, therefore, be conducted in writing, except in branches to which this method is inapplicable; otherwise all the pupils are not subjected to the same test. It is obvious that an examination for the purpose of ranking should comprise all the branches taught; and here the difficult thing to do is to assign to the result in each branch its just relative value; that is, to determine what shall be the maximum mark or number for each branch. Perhaps the best criterion for determining this matter is the relative amount of time assigned to the respective branches in the program.

The class examination seems to have been introduced as a remedy for the evils of the marking system. But in some cases has not this class examination become an evil as great as that it was intended to remedy? When pushed to excess, the examining and marking of papers by teachers becomes an intolerable burden, and the pupils waste their time in giving proofs of their ignorance. The better plan would seem to be to combine judiciously the system of marking lessons with the system of examining for rank, pushing neither to an extreme. But I am inclined to think that the marks for conduct should in no case be combined with the marks for scholarship in determining the rank of pupils or in determining their promotion, unless promotion is based on a competitive examination and in a particular case the scholarship marks of two competitors are equal, but their conduct marks unequal: for conduct marks and scholarship marks are not commensurable, any more than yards and pounds.

II. Examination of pupils for promotion, for graduation, and for distinctions or honors.

1. Examination for promotion: This examination should be conducted by the principal, under general regulations and supervision, and with

the coöperation and advice of the class teacher. To take this authority from the principal is to deprive him of one of his most important functions. Promotions considered with reference to examinations may be of three kinds:

(*a*) Promotion of the class en masse or by seniority, without a serious test examination.

(*b*) The system of individual promotion by capacity. By this system the best in each class are promoted at any time when there is room in the class above. This amounts to promotion by competitive examination, and one of the essential things in a competitive examination is that the conditions be made known before the race begins. So from the outset of the preparation the competitors should be informed definitely as to the nature of the ordeal, namely, on what subjects they are to be examined, whether the sum of the class marks is to be the criterion, or whether the examinations alone are to be considered, or whether class marks and examinations marks are to be combined, and in what proportion. This examination should be conducted by the teachers of the competitors, as they alone know with accuracy what has been taught, but under the supervision of an impartial umpire. And it should be conducted in writing so far as this method is applicable.

(*c*) Promotion by examination of passage. By this system the identity of the class is preserved, as far as practicable, by simultaneous promotions; every member is subjected to a serious examination as a test of fitness for advancement. The results of this examination, combined with the lesson marks, determine the promotions, those pupils only who fall below a reasonable minimum being obliged to repeat the course of the class. To perfect this system the principal must, as occasion requires, exercise the prerogative of allowing exceptionally able pupils to "jump" a class and of degrading those who are exceptionally delinquent; that is, he must make some individual promotions. The class examination above referred to will give seasonable intimations to the pupils of their probable standing at the examination of passage, and thus afford them an opportunity to recover lost ground. By this system, which seems to me the best, while an examination is required, it is not a competitive examination, where only a minimum result is requisite for passing. Hence, the examination may be either written or oral or both. In all examinations which are not competitive it is desirable that both written and oral tests should be applied; for some pupils are strong on paper and weak in speech and others are weak on paper but strong in speech, and the examination should afford each an opportunity to show his real ability, since in an examination for promotion the point aimed at is not to know whether the pupil can answer on all the details of the matters taught, but whether he is capable of taking the higher stage with profit to himself and without detriment to the class.

The examination for transfer from one grade of schools to another (that is, from the primary to the grammar and from the grammar to the high) ought to be conducted on the same principle as that for the passage from a lower class to a higher in the same grade of schools, but the control of this examination should be in the hands of an authority independent of both the grades concerned. The principals of both the grades, however, should be called in as advisory assistants. From the principal of the grade from which the transfer is to be made, the candidate's record should be required, and a certificate of probable fitness; from the principal of the grade to which the transfer is to be made, advice should be had and considered as to the minimum of requirement allowable for admission; that is, as to the character of the questions and the minimum mark for passing.

2. Examination for graduation. Here the principal should coöperate so far as to furnish the list of all the pupils entitled to be candidates, the scholarship marks of each, and his opinion of their maturity. But the actual examination ought to be under the control and management of the superintending authority, because, in a system of schools, it is desirable that all the diplomas of the same grade should have a uniform value; and this could not be the case if each principal should make his own standard. As a matter quite of course, the result of the examination should be combined with the record of scholarship. And it is desirable that the examination should be both oral and written. It is essential that the examination should cover all the subjects of the program of the graduating class, but not all the topics; nor should it go back to the matters of the preceding class, as they have been already satisfactorily passed. And in all sound educational economy some privilege of oblivion must be permitted to students. Nothing is more to be deprecated in the matter of test examinations than to demand of the examinees readiness in all they have ever studied.

Examination for graduation, as in the case of examination for promotion, should never be competitive, only a certain minimum of qualification being demanded. The level of this minimum must, of course, be raised as high as the best good of all requires. The graduating examination should be in accord with the program; that is, it should conform to the program both in respect to spirit and scope. The ranking of graduates according to their marks renders the examination in effect competitive. This is practised to some extent in western cities in connection with high school graduation. Its effect on girls, according to my observation, is decidedly injurious.

It is well known that school authorities sometimes fix in advance the percentage of mark requisite for promotion or graduation. Is not this highly unpedagogical? Of what avail is it to fix the minimum percentage before you know the character of the questions or the degree of strictness in marking?

3. Under the second class of examinations there is only one more variety to consider, namely, the examination for distinctions or honors.

From the nature of the case this must be a competitive examination, therefore essentially the same in character as that required for determining rank in the class.

III. General supervisory examination. This examination is made by the general supervisory agent or agents to ascertain the condition and progress not only of each and every school as a whole in every branch of instruction, but of each individual class embraced in the system, and by this means to ascertain also the merit and standing of the principals and their assistants. But the scope of this examination is not limited to the acquisition of information about the schools for the use of the governing authorities; an important part of its object is to stimulate teachers to efforts to keep up and increase their efficiency; to see that all the subjects of the program are taught in due proportion and kept abreast of each other; and to serve as a guide to the teacher, both as to methods and as to the interpretation of the requirements of the program.

This examination should be so conducted as to discover and appreciate merit, to encourage sound teaching: teaching that trains and educates; teaching that is solid rather than showy; teaching that aims at the highest good of the pupils, morally and physically, as well as intellectually. It is its purpose also to detect incompetency and unfaithfulness. In a word, its office is to give a just and true report of the teacher's work, and at the same time incidentally to afford the teacher, as far as possible, stimulation, encouragement, and guidance. Without the judicious examination of schools by well qualified experts, there can be no adequate guarantee of the faithful and efficient performance of their duties on the part of teachers. I say *judicious* examinations, for, if schools are not wisely examined—examined as only persons of thorough pedagogical knowledge, ripe experience, and sound judgment can perform this service—it is as well, perhaps, to leave them without it altogether. But an examination so conducted as to encourage true merit, to promote the use of the best methods, to regulate in the best manner possible the instruction imparted, both in respect to quantity and quality—it is by such examinations, if at all, that will be hastened the dawning of that day when there will be no cramming, no high pressure, no idleness, no excess, no deficiency, and no wasting of time or strength on the part of teachers or pupils.

The objects and character of this examination suggest the requisite qualifications of the examiner. In the first place, he should be independent, or, to speak more precisely, he should not be dependent upon the teaching corps. He ought to have had experience in teaching, and if he has had experience in grades similar to those in which he examines, so much the better. His mind ought to be liberalized by a wide range of educational reading and study. He ought to have a good deal of practical common sense. He should be more inclined to look on the bright side of things than on the dark side. He should look more sharply for merits than for demerits. He should fear only two things: he should fear to do injustice and he should fear himself. He should be eminent for good breeding, as a guarantee of respectful treatment of teachers and pupils. And to make sure of the requisite sympathy, like Burke's lawgiver, "he ought to have a heart full of sensibility." In a word, for the successful exercise of this delicate and most useful function the very best educators are demanded. This function is next in importance and in point of difficulty to that of the chief supervision which overlooks the whole economy of the system.

Without this instrumentality no system can be complete. And so, instead of saying nobody is equal to such a work, and therefore it must be dispensed with, we should rather "get the best," and trust to the law of supply and demand to furnish ultimately the requisite combination of rare qualities for the most satisfactory performance of this duty.

As to the method and plan of proceeding something must be said. In the first place, this examination should be made by the examiner in person, and not by sending a set of questions to be answered. I am aware that the plan of testing the work of teachers by a simultaneous, uniform examination of all grades by printed questions is somewhat in vogue in some places. But I regard this plan as very objectionable. It is impossible to do justice by this plan. If this be so, no other objection to it need be raised. But even if it were possible to apply it without doing great injustice, it would do more harm than good.

Before the examiner begins his examining visits he should be prepared with a carefully matured scheme, set out in a blank or blanks, covering all the subjects of instruction and all the other matters to be taken into the account in estimating the merit of the teaching, discipline, and management of the class or school. The examination then consists in such observations and inquiries as may be needed to enable the examiner to fill his blanks on the spot; that is, to make up his judgment in detail and in general. Of course it would not be necessary to examine each pupil in every branch. In some branches it would be sufficient to witness the exercises as conducted by the teacher. This examination should be neither exclusively oral nor exclusively written, but a mixture of both methods. Printed questions are unnecessary. In elementary grades the responsibility of conducting the examination of a given class or school should be in the hands of one examiner. In the higher grades of institutions of instruction, where it becomes necessary to introduce departmental teaching, the work of examining may with advantage be divided in a manner corresponding to the usual division of studies into groups.

I have now outlined all the different kinds of examinations which seem to me required in a well organized and well managed system of public schools. It belongs, of course, to school boards to make the necessary provisions for these examinations.

Good teachers, who know what is best to be taught and how to teach it, have a right to an examination of their schools by competent examiners, that they may have proof of the excellence of their work; moreover, their continuance and progress in well doing would be promoted by the sympathy and encouragement which the right sort of an examination would afford. Teachers of a different character, who have an imperfect knowledge as to what ought to be taught and a limited acquaintance with the best methods of teaching and possess little professional ambition, *need* frequent, judicious examinations and inspections to instruct them in their duties and to stimulate them to exertion.

Examinations may be the occasion of much good or much evil. The proper objects and uses of examinations is a subject which demands the serious attention of every one who is called to participate in the supervision of educational institutions. It is obvious that the utility of examinations depends wholly upon the plan upon which they are based and the manner in which they are conducted. It sometimes happens that a man quite unaccustomed to the ways of the school room, but possessed of good sense and right feelings, will make an examination very profitable to both teacher and pupils. On the other hand, a person of equal or superior intelligence and actuated by the best of motives may, from inattention to the principles which should guide his proceedings, produce the opposite effect. Teachers and pupils are depressed and disheartened, instead of being stimulated and encouraged. They have faithfully tried to do a good work; they *know* they have done it. But this is overlooked or underestimated, and they are admonished, gently it may be, for not doing something else which they could not do or which they did not know would be required of them.

The examiner should always remember that he is to a large extent shaping the subsequent teaching as well as ascertaining the preceding. Teachers are ever strongly tempted, even against their better judgment, to make their teaching conform to the kind of examination expected. They cannot be blamed for adopting such a course. Indeed, they might with greater reason be blamed for not doing so, since the primary responsibility is with the committee, who themselves examine or appoint the examiners, are the legal trustees of all interests of the schools under their charge, and it is within their province to determine what description of instruction shall be given. Teachers are with reason expected to give satisfaction to their employers and supervisors. Examinations are held to determine how far this end has been attained. But they do more. They virtually indicate what the examiner thinks the pupil ought to know, as well as to reveal what he does know. It is important that examiners should keep this fact in view, and conduct their examinations accordingly. If the examiner comes into the school every quarter or every month only to be entertained by exercises in some favorite style, the teacher will soon find it convenient, if not necessary, to be prepared for such a course.

But examinations should be conducted not merely with reference to discovering what the pupil knows and to pointing out what he should know. They should go further and look to higher results. They should seek to find out what the pupil *is* and what he can *do*; or, in other words, to see what *discipline* of mind and heart and body he has had. It is true, this kind of examination is difficult and few are qualified for it; but it is necessary as a means of securing the highest style of teaching. We must not, however, fall into the error of supposing that its results can be adequately expressed by percentages. Let our examinations be extended into this higher sphere of education, and many teachers will be glad to occupy themselves with it to a greater extent than they have been accustomed to. But then it must be borne in mind that the teacher cannot prepare his pupils for everything in a limited period of time. There must be a choice of subjects in the general scheme and there must be a choice of topics and methods in each particular branch. The greatest injustice is often done by an unfair comparison of schools in some one branch only. A particular school may be immensely superior to another in one branch and yet be on the whole immensely inferior to it. And so with systems of schools.

If a teacher, in obedience to direct or indirect instructions or in the absence of all instructions, has adopted a certain course and has prepared his pupils for one sort of examination, he ought not to be censured for their failure when put to a totally different test, which he could not have anticipated.

Before a teacher is censured for any supposed deficiency, he should be permitted to show what he has attempted and what he has done and to give his reasons for his course. For instance, the examiner finds that the pupils of a certain school can recite the text of the books glibly enough, but that their reasoning faculty has not been duly exercised and trained, and that as soon as they are taken out of the routine of question and answer they are bewildered and cannot proceed. He is dissatisfied and suggests that the pupils should be taught to think, to reason, to investigate, to understand; that they should learn things as well as words. But on inquiry he might, perhaps, find that his predecessor, a year before, was displeased for precisely the opposite reason and strongly insisted upon the verbatim recitation of the words of the text books.

Examiners ought to avoid extreme notions on the subject of education. The good teacher, who is master of his art, if left sufficiently free, will give to each branch and each department of education its proper share of attention, neglecting none, making a hobby of none. And such should be the aim of the examiner, if he would make his examinations profitable.

And, finally, in examinations, the teacher's individuality should be duly respected. I do not mean here by individuality a peculiarity of opinion or theory which takes the liberty to oppose openly or quietly ignore the plain requirements of the regulations respecting the management of the school or the studies to be taught. Nor do I mean that oddity, capriciousness, whimsicality, or eccentricity should claim indulgence under the more respectable designation of individuality. Nor would I allow incompetency to escape its just criticism and its just estimate on the plea of the rights of individuality. But what I mean is that it should not be insisted on that each teacher should do everything in the same way and at the same time. Teachers should be allowed to make their own plans and pursue their own methods so far as is consistent with the interests of the whole system, provided that the desired results are produced.

The New York system affords an admirable example of wise provision for what we have designated as the general supervisory examination. The chief superintendent is furnished with a sufficient number of assistants, who are made responsible to him for the faithful performance of this service. The number of assistant superintendents at the present time is seven. Almost the whole time of these officers is devoted to this service, and the majority of them have by long experience acquired great skill and efficiency in the work.

> All schools and classes under the charge of the board of education are examined by these officers at least once during the school year. In these examinations a careful and patient inquiry is made into the discipline, progress in study, punctuality of pupils, care of text books, ventilation — in short, everything that characterizes efficient management and makes an excellent school.—(Report of City Superintendent Hon. John Jasper, 1882.)

During the year 1882 2,500 classes were examined in this manner. For each class a blank is filled by the examiner giving the result of the examination in each branch of instruction and in the matter of discipline. There is also for each school a blank to be filled, indicating the character of the principal's general management. The grades of excellence are indicated not by figures, but by the following words: Excellent, Good, Fair, Indifferent, Bad. The blank so filled and signed by the examiner becomes the official, authoritative report of the condition and progress of the class and the merit and standing of the teacher or principal. These reports are submitted to the superintendent and recorded under his direction for the use of the board. If a report is unsatisfactory the teacher is sent for by the superintendent, who points out the deficiency and appoints a time for another examination, allowing a reasonable interval for another trial on the part of the teacher. The general results are tabulated and printed in the annual report of the city superintendent.

This plan of examination and inspection is no novelty in the New York system. It is as old as the system itself. It was so wisely contrived at the outset that the experience of more than two-score years has suggested no essential modification of its features. In this respect New York has not only been superior to the other large cities of the country, but has been at least equal to the foremost cities abroad. In such as to render it impossible for a single officer to make personally the requisite detailed general *examinations* and reports. More than a quarter of a century elapsed before any practical steps were taken towards remedying this defect, although, during this period, the system was greatly developed and improved in almost every other respect. It is but just to say, however, that the devotion and ability of the corps of masters, who had been made really supervising principals in 1866, were such as to reduce to a minimum the necessity of a general supervisory examination in detail. The present system of supervisory examination has been in operation eight years with no essential modification.

The creation of the office of supervisor and the functions assigned to it have been referred to under the head "Supervision." The supervisors, six in number, are required to make a general examination of all the schools at least once a year, in order to ascertain their condition and the standing of the teachers, and to record the results for the use of the school board. The supervisors divided the city into six districts, to correspond with their own number, each assuming the principal charge of one of these districts for supervisory duties. They also divided the studies in all grades into six groups, each supervisor assuming special responsibilities in regard to one of these groups. But no general system of supervisory examination, properly so called, was devised or attempted to be carried out. The plan of record adopted to meet the requirement of the regulations was to record in a book, for the use of the board, against the name of each teacher, an estimate, graded on a scale of three, of ability in teaching, and an estimate, on a similar scale, of ability in disciplining, these estimates being authenticated by no supervisor's signature. Each supervisor adopted such a course as he saw fit for obtaining information upon which to base his estimate of the standing of teachers. The schools were visited by the supervisors at pleasure. If a supervisor saw fit to examine a class in one or more branches, he did so. Sometimes the advice of a principal would be sought as to the ability of teachers under his charge. No teacher was allowed to know the estimate of ability standing against his name. Although this system has been in operation for upwards of eight years, there is believed to be no existing evidence that any one class has ever yet received a single appropriate supervisory examination. The superintendent has no responsibility whatever in connection with the supervisory examinations.

One of the results of this system has been a regrettable demoralization of the teachers. Another result has been that the board has not been furnished with the needed authentic information as to the actual condition of the individual schools as to any one branch of instruction.

PROMOTIONS.

Promotion is of two kinds: (1) the transfer of pupils from a lower class to a higher one in the same school and (2) the transfer of pupils from a school of a lower grade to a school of a higher grade. The management of promotions is a matter of great importance in school economy.

There appears to be no one well defined and generally approved plan of promotions in our city systems of schools, and there are probably few cities where the mode of conducting examinations is the same in the schools of the different grades. As to the frequency of promotions it is probable that in the greater number of schools the transfer of pupils from the lower classes to the higher takes place annually; and probably there is no system where the work assigned to a class is intended for more than one year of study. The period of one year may, therefore, be considered as the maximum interval between the regular promotions of classes. This period is found by experience to work well in high schools and in the upper grades of grammar schools, and especially in the highest grade. But where it is carried through all the grades of the grammar and primary school it is found to be attended with grave inconveniences and evils, even when transfers are made with a good degree of care and professional skill. The lower classes are invariably crowded; a considerable percentage of pupils is kept waiting a long period for admission, while there are many seats in classes above rendered vacant by the withdrawal of pupils before completing the course; the time for promotion is too distant to operate with much force on the minds of the younger pupils as a stimulant to application and meritorious conduct; in numerous cases the principal finds himself obliged to choose between the alternatives of transferring pupils not properly qualified to enter the higher class or subjecting them to all the disagreeable consequences of a repetition of a whole year's course by refusing them promotion. To get rid of the evils which inevitably result from the plan of uniform yearly promotions, some cities, going to the opposite extreme, have reduced the interval between promotions to a fourth of a school year, that is, about fifty days. St. Louis seems to have taken the lead in experimenting with this plan. In this city, although the grades or classes correspond to the years of schooling, as in most other cities, each grade is broken into four subgrades, corresponding to the quarters of the school time. This expedient has been resorted to in order, by reducing the intervals between the classes to a minimum, to facilitate individual promotions, and give the bright, capable pupils, a chance to go on, leaving behind those who are more slow and indolent. The point aimed at is to give flexibility to the graded system and maintain the desired closeness of grading in classes by frequent reclassification, instead of endeavoring to accomplish the same object by unduly restraining the foremost pupils and unduly urging forward the hindmost.

As the reclassification takes place at the end of each quarter, it is considered no great hardship for the poorer scholars in the class to repeat the course, and, on the other hand, some of the very best pupils are enabled at times to skip a class, and by this means to shorten the time required for completing the curriculum. Quarterly promotions in all the elementary grades necessitate, of course, quarterly graduations and quarterly transfers of graduates to the high school. If this plan were carried out in the high school, it would involve the necessity of greatly multiplying the number of the classes and of quarterly graduations corresponding to the quarterly admissions. But this is not the case. Although pupils are admitted to the high school four times in the year, namely, at the end of each school quarter, in November, January, April, and June, graduation takes place only twice, at the middle and close of the school year; so that pupils admitted at the end of two successive quarters are brought to the same stage of advancement or at least to the same class before graduation.

This interesting experiment in the management of promotions is described in detail in the report of the superintendent, Mr. Edward H. Long, for 1880-'81, as follows:

> In our schools each grade represents the work that can be accomplished by the average pupil in one year; but no effort is made to advance pupils or classes beyond their ability. No attempt is made to reach the end of the first quarter's work of any grade at the close of the first ten weeks of the year, or the second quarter's work at the close of the second ten weeks, &c.; hence, classes are at various degrees of advancement at all times throughout the entire course. In one of our eighteen-room schools, for instance, there are at least thirty-six classes, no two being equally advanced. In the lower and intermediate grades these classes are separated by intervals of from five to ten weeks. Bright, industrious pupils, who show an ability to advance more rapidly than the remainder of the class, can be placed in the next higher class, and those who fall behind for any reason can enter the next lower class. This system also makes it possible to reclassify pupils and organize classes at any time. Promotions can be made whenever a pupil or a class has completed a given amount of work. No gifted pupil is held back and no dull pupil is pushed beyond his ability. The eight grades of the district school course are completed by many pupils in much less than eight years, while those who require more time are not compelled to go back over an entire year's work whenever they fail to make the required examination for promotion to the next higher grade. The number of classes in the school, as well as the number of pupils in each class, can be increased or decreased whenever occasion requires, without injustice or injury to the individual pupils. The accession of pupils frequently causes a class to become too large or the withdrawals from school may deplete the number so that a class becomes too small. In the first case there can be a readjustment by advancing the more mature pupils to the next higher class; in the latter case, by promoting to the class the brighter pupils from the next lower class or by breaking up the class and distributing its members among other classes suiting their ability.

It is evident that this plan affords an effectual remedy for the cast iron rigidity of the graded system as administered in very many cities where only annual promotions are made, by written examinations, with questions furnished by the superintendent, the percentage for passing being fixed beforehand and the pupils in each room, under a single teacher, being always kept in the same grade and class, that is, "company front" But the St. Louis system, while it insures sufficient flexibility by frequency of class promotion combined with individual promotion, is not without liability to abuse. While the "company front" plan, pure and simple, even when well administered, injuriously impedes the progress of the more talented scholars, and over-worries the slower ones in trying to make them keep step, and then condemns too many of them to loiter over the same course another year, the St. Louis plan, on the other hand, unless carefully watched and judiciously handled, is liable to hurry forward too rapidly or at least not sufficiently check the nervous, bright, and ambitious pupils, and at the same time to leave the phlegmatic, dull, and unambitious ones too much at liberty to take their own time for completing the course.

The Boston plan of promotion may be regarded as a compromise between these two extreme types. In the primary schools the pupils are promoted semiannually from class to class, mostly by classes, and also semiannually to the grammar schools, one of these promotions taking place at the middle of the school year, the other at the end of it. At the midyear promotion to the grammar school, promotion in the latter takes place by a readjustment of all the classes, so far as is practicable and desirable. By this moving-up process the seats which have been made vacant in the grammar school by the withdrawal of pupils are filled, and room is thus afforded in the lowest class for the in-coming primaries. It is found, practically, that, as a rule, no changes have to be made in the graduating class, and few in the next one or two rooms below it. At this midyear promotion in the grammar school a good opportunity is afforded for making all the necessary individual promotions, but in the lowest classes the promotion is mainly by class, a few individuals remaining in the rear and a few taking a "double."

At the end of the school year only, pupils are graduated from the grammar schools and promoted to the high schools. Long experience has developed no practical difficulty in admitting pupils to the grammar schools twice a year while graduating only one class a year, and at the same time adjusting the classification so as to meet the wants of all the pupils. While this feature of the plan, which is substantially that of the St. Louis high school, is incongruous in theory, in practice it works harmoniously and beneficially. In the high schools pupils are promoted annually on examination and scholarship record. The principals are responsible for the promotion of the pupils under their charge from class to class; and also the grammar school principals for promotion from the primary to the grammar, the former being under their charge as principals. This system, which has been in operation many years and is a curious historical growth, not the invention of any theorist, has on the whole worked very satisfactorily. The imperfections in its working could be easily corrected by a competent superintendent invested with the requisite authority. What has been unsatisfactory in its working has been due mostly to the unwillingness of the principals and teachers to break up the "company front" in exceptional cases, and put pupils of two unequal degrees of advancement in the same school room, under one teacher—that is, to do to a greater extent than has been done what the St. Louis plan does universally. This plan, while it is less rigid than the "company front" plan on the one hand, has on the other less of the "go-as-you-please" in it than that of St. Louis. A few years ago an unfortunate mania for experimenting, without sufficient regard to the lessons of experience and the opinions of the wise, led to the abolishing of this plan of semiannual promotions and to the substitution therefor of the annual promotion. The result has not been a success, and the semiannual plan has been restored. The same experimenting mania took the promotion of the primary pupils to the grammar schools from the hands of the principals and placed it in the hands of the supervisors, who, for this purpose, made use of a rigid written examination, although the pupils should be only eight years of age. This latter innovation has proved as unsatisfactory in results as it is unpedagogical in principle.

In New York the system of promotion is very similar to that of Boston, the promotions from the grammar to the high school and the class promotions in the latter being annual, while the class promotions in the primary and grammar and the promotions from the former schools to the latter are semiannual.

The provisions respecting promotions in the primary and grammar schools are so unexceptionable in character that I quote them here as a model worthy of general imitation:

> The principals of the schools shall examine all their classes in the prescribed branches of study at least twice a year, namely, immediately before each regular promotion, and record the results of the same in a book kept for that purpose. A report of all such examinations shall be sent to the city superintendent, who shall have it recorded in a book kept for that purpose. The adjectives to be used by the principals in such examination shall be the same as those made use of by the superintendent under the by-laws.
>
> Promotions shall be made from the primary to the grammar schools semiannually, and not oftener, except by the written permission of the city superintendent; and no pupil shall be promoted from any primary school unless examined in all the studies prescribed for the first grade of the course of instruction for primary schools and found qualified by the principal of the department into which the promotion is to be made, and, when found qualified, such pupils shall be promoted without delay. Pupils may be transferred from the primary to the grammar schools before completing the first primary school grade with the consent of the committee on course of study and school books and on the recommendation of the city superintendent, to whom application may be made by the trustees in any ward, showing that said transfer is necessary in order to relieve the crowded condition of any primary school and to fill vacancies in the classes of the grammar schools. Pupils thus transferred to any grammar school shall, however, be taught in the primary grade until regularly promoted from the same, but may be counted as a part of the regular attendance of the grammar school.

I conclude what I have to say on this topic with the following summarized suggestions:

(1) For the lower grades annual promotion is not sufficiently frequent.

(2) The quarterly promotion is perhaps too frequent, especially if car-

ried through all the grammar school grades, necessitating quarterly graduation from the grammar school and quarterly admission to the high school.

(3) Better than either of these extremes is the plan of semiannual promotions in the lower grades and annual in the upper.

(4) It should be understood that a division (that is, the body of the pupils in one room under one teacher) may be composed of pupils belonging to two different grades or classes, if the just classification requires such an arrangement.

(5) Promotions should be made both by classes and individually.

(6) In determining the qualification of the pupil for promotion, his mental capacity, physical condition, and age should be taken into account, as well as his scholastic attainments; the examiner should ask himself, Is this pupil capable of doing the work of the next class without injury to himself?

(7) Promotion should not be made on the basis of a predetermined percentage of examination results. Promotion from class to class should be made by the principal.

(8) Promotions of primary scholars, comprising pupils from five to eight or eight and a half years of age, should not be made to depend on the results of a written examination.

EXHIBITIONS.

By exhibition is meant the public occasion of the graduating exercises of a school. Exhibitions are probably in vogue in nearly all public schools where graduating diplomas are given. But public occasions in the more important city schools, marking the close of the school year, were not uncommon before the public school diploma came into use. They were sometimes called annual public examinations as well as exhibitions. In former times, these occasions, by whatever name designated, partook largely of the nature of an examination. In some parts of New England in the last century and the early part of this it was customary for the clergyman to attend the closing exercises of the school in his parish or town and to question pupils on the Assembly's Catechism. From twenty-five to fifty years ago the chief feature of the occasion consisted in the examination by the principal, in presence of the assembled visitors, of the upper or leaving class in the various branches of instruction pursued during the year, this examination being frequently supplemented by questions from members of the committee present. Specimens of writing and drawing were handed round for inspection by the visitors; the best readers were called upon to read selections prepared for the occasion; some compositions were read, and if there were boys in the class some of them made declamations; the singing of simple melodies by the pupils was sometimes interspersed; then came the awarding of medals, where medals were in vogue, and the announcement of distinctions; and finally remarks were made by the chairman of the committee and perhaps other members, and more especially by the men of prominence invited to be present for the purpose. Soon after the close of his presidential term in 1801, John Adams was invited to be present and deliver the Franklin medals at the annual exhibition of the Centre School in Boston, which occupied the site where the city hall now stands. One of these silver medals was proudly shown me by its recipient, then about ninety years of age. The exhibition is an instrumentality of great value in creating and sustaining public opinion in favor of public schools, as well as of stimulating the pupils to good work and good conduct and perseverance in well doing. The audience on these occasions is largely made up of the mothers of pupils belonging to the school, whose interest in the education of their children is thus greatly increased. At an exhibition where I happened to be present, one of the speakers enforced with an apt illustration the importance of completing the course; a mother present made her way to the speaker through the crowd at the close of the exercises, and, thanking him for his advice, said, "My son *shall* go through;" and the next year she had the pleasure of seeing him graduate with honor. This incident illustrates one phase of the influence of the exhibition. In the Paris schools what we here call exhibition is the occasion of giving out the prizes of books and money and announcing the merits of the scholars in the different branches, preceded by a formal address by some eminent person invited to preside on the occasion. One of these is referred to under the head of "Evening schools." The great occasion of this sort in France is the general concourse (concours général) which takes place annually in the great hall of the Sorbonne, under the presidency of the minister of public instruction. The object of this occasion is to announce the prizes resulting from the competition in scholarship of the several lycées and colleges of Paris and some suburban towns. An address is made by the minister; a Latin discourse is read by some eminent professor, long before designated for this honorable service on account of his distinguished scholarship;[1] and then the valuable prizes, consisting of books tastefully bound, are distributed to the successful pupils. The distribution of the prizes to the pupils of a boys' elementary school was one of the most interesting school occasions which it has been my fortune to witness. An eager crowd of decently dressed parents occupied every available inch of space in the hall. The boys were a set of compactly built fellows, with chubby faces of a healthy hue, who seemed cool, self possessed, and respectful in their bearing. I should think that every boy had at least an honorable mention for something. The prize boys were called to the platform to receive their books, and the little crown of green paper in imitation of the wreath of palm was placed upon their heads by the president or some person designated by him for the purpose.

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[1] In 1883 this was abolished and a French discourse substituted.

No doubt the exhibition has contributed in no small degree to create in the public mind a favorable sentiment towards the schools; but like other good things it is liable to abuse. Care should be taken that too much time is not spent in its preparation. The tendency of the exhibition in our day is to become too showy and to degenerate into a popular entertainment. In girls' schools dress is apt to become too prominent a feature, thereby imposing a grievous burden upon the parents of the poorer children. At the same time it affords an excellent opportunity to the judicious teacher to develop in the pupils self respect and a reasonable independence and individuality in respect to dress, and to teach the shoddy aristocracy that a public school exhibition is not a fit place to make a display of Lyons silks and many-buttoned white kids.

The dialogue is admissible, both as an element of education and as a means of attracting a class of the public who would not otherwise attend, as the church choir swells the number of the hearers of the sermons; but the comic dialogue should be used very sparingly, if at all; and so humorous declamations and readings are allowable, but they should be choice in character and moderate in proportion. The reading or reciting of original compositions by their authors is of course the supreme performance. Nothing affords so good a test as this of the taste and culture of the teacher, and perhaps of his honesty, too, in rigidly suppressing all plagiarisms. The aim should be to show at the exhibition, as far as practicable within the limited space of time appropriated to such an occasion, the method and results of instruction and culture. But the æsthetic side of the culture will almost as a matter of course, and perhaps properly, be made more prominent than the more practical and scientific side; this will be shown in the specimens of drawing and calligraphy, in the singing, expressive reading and declamation, also in the bearing and behavior of the pupils, and in the appropriateness of their dress. If a pupil has special talent in any direction opportunity should be given, if possible, for the exhibition of that talent. I have known the master of a boys' grammar school to make his exhibition extremely attractive by a judicious application of this principle. Now a boy would be called on to sing a solo or play a tune on a violin; at another time a boy would give a brief specimen of his skill in playing the accordion and another exhibit his dexterity in shaking the ebony clappers.

I have known the exhibition in a high school for boys to be held for many years quite strictly to the presentation of the method and instruction in the several branches of the course; the pupils knew beforehand that they must pass the ordeal of a genuine, impromptu examination, and that every one of them was liable to be questioned in public on any of the studies of the year. These exercises were followed by a few original declamations. The exhibitions were always crowded, and it was not strange that they should have inspired its patrons with the strongest confidence in the value of the school.

In some grammar school exhibitions a serious error has crept in, namely, that of bringing upon the stage pupils of the primary grades, and even the youngest of these. Nothing could be more inappropriate. The occasion belongs to the graduating class. Of course it is desirable that as many as possible of the pupils in the next classes below should be present and witness the exercises; and it is allowable, and perhaps desirable, that one or two of the most proficient pupils in each of the rooms of the grammar school should take their places together on the stage and read each in turn, beginning with the youngest, a brief selection.

Occasionally opposition to exhibitions is heard in some quarters; teachers sometimes become weary of the labor of preparation and would be glad to escape the labor and trouble which it costs; but it would be a mistake to abolish the exhibition. It should be retained by all means, but it should be carefully guarded against all abuses: it should not be too ambitious; not much time should be devoted to special preparation for it; its exercises should consist mainly of a selection of performances in the routine work of instruction; the graduates should not be called out and designated according to their rank in the class, especially if the class is of girls.

RECESS AND NO RECESS.

From time immemorial it has been the custom everywhere to interrupt the work of the school session, both forenoon and afternoon, by a recess varying in length from ten to twenty minutes. During this recess the pupils are allowed or required to pass from the school rooms into the open air of the school yard, and there enjoy as much freedom from restraint as circumstances will permit. In former times the recess was usually the same for both the older and younger pupils, about fifteen minutes at the middle of each session. At present it is common to make additional provision for physical exercise, rest, and recreation in primary schools. In infant schools, recess is necessary after the lapse of one hour, and change of position and physical exercise should be allowed as often as once in thirty minutes. For pupils twelve years of age and upwards there may be allowed a session of two hours without recess, but such a session should be broken in the middle by some physical movements or rest.

The regulation of the city of Cincinnati respecting school hours and recesses is perhaps as judicious as can be devised for the same latitude, and it has borne the test of experience for a considerable period. It is, therefore, introduced here as a good model.

> The hours of tuition and study shall be as follows: From September 1 to July 1, from 9 A. M. to 12 M. and from 1¼ P. M. to 4 P. M., with fifteen minutes recess each morning and afternoon. Grades E and F shall be dismissed each afternoon one hour earlier than the time of closing school (November 2, 1874).

For the better guarding of the health of the pupils of grades D, E, and F (lowest primary grades) from injury from too long confinement in their school rooms, there shall be allowed to the pupils of these grades, at the close of every recitation, the space of five minutes for calisthenic exercises in the room, during which time the room shall be well ventilated, and the recitation shall be shortened for this purpose (November 7, 1853).

In some cities the teachers are forbidden to deprive children of recess as a punishment, and it would be well if this rule were universal.

In many cities the afternoon session for the grammar and primary grades has been shortened to two hours and the general out-door recess dispensed with in the former. For some time past there has been a tendency to go too far in lengthening vacations, multiplying holidays, and shortening sessions; but school boards are not likely to find any difficulty in persuading teachers and pupils to submit cheerfully to further changes in this direction. The experienced inspector knows very well that there is no better test of the tone and discipline of a school than is afforded by the manner in which the recess is conducted. In a first rate school he finds here and there a pupil excused from recess for the day for good reasons; he notices that every signal is instantly obeyed, that the marching is orderly and rapid, while the gait is natural and easy; he observes with pleasure that in the yard the oversight of the teacher or teachers in charge is vigilant and constant, and that the boisterousness and activity of play are repressed only so far as is required by due regard to the rights of the neighbors and the safety of the pupils from personal injury, while both noise and play are instantly checked by the signal therefor; and, finally, that on returning to their rooms the pupils lose no time in getting down to work.

What a drill, what a recreation and rest, what an exhilaration in all this! An interruption to study? Ten, fifteen minutes so spent, time lost? Say, rather, it is fire to the engine, wind to the canvas. But, aside from considerations of recreation and rest, the recess is an imperative physiological necessity, and in this necessity is found the explanation of its universality.

The universal conviction of the utility and necessity of the recess has prompted school authorities to provide as large lots as possible on which to erect school-houses. Immense sacrifices have been made for this object in all the more advanced educating countries. The extent and character of the playground have, in fact, come to be a tolerably reliable indication of the liberality of a community in respect to its schools.

Like other good things, the recess is liable to abuse. By injudicious and inefficient management its good effect may be largely offset by attendant evils. To avoid the possible or actual evils and inconveniences of the recess it has been proposed of late in some quarters to abolish the general recess altogether, and with it, of course, the legitimate use of all school playgrounds which have been acquired at such an enormous expense. This no recess plan has actually been introduced into several cities and towns in New York, and two at least in

New England.[1] The substitute consists in substance of a shortening of the sessions, permission of the pupils to leave the room individually, and indoor calisthenics and marching.

The precise program of this plan is as follows: In the primary and grammar grades the morning session begins at 9 o'clock and closes at 11.30 and the afternoon session begins at 1.30 and closes at 3.30. The three lower grades are dismissed in the afternoon at 3 o'clock. In these schools the mid-session recess, as it may be termed, for pupils to go out together into the yard, is dispensed with, but at 10.15 in the morning and at 2.30 in the afternoon five minutes are devoted to physical exercises and marching, in every school room, while the windows are thrown open sufficiently to change the air of the room. There are also, in some of the grades at least, other brief intervals of rest and change of position.

The objections raised by the advocates of this strange and surprising innovation against the recess are based on the assumption of injudicious and inefficient school discipline and school management. At recesses managed as I have seen them in many a school, and notably of late in Denver, how little would one find of bullying, moral contamination, personal injury, exposure to colds, or occasion for discipline! The demand for the abolition of recess must be adjudged a confession of weakness. The enemies of the school system have already so charged, and their charge is well founded. On the other hand, the benefits claimed for the no recess plan are based on the assumption that this plan is carried out by efficient and judicious teachers.

Should the recess degenerate into a nuisance the remedy would lie, not in abolishing the recess, but in reforming it by changing the management and arrangements of the school. The bungler destroys instead of reforming; the master reforms instead of destroying.

The no recess plan is based on the flower-pot theory of education, which finds little justification in experience. The way to educate a youth so that he shall have a sound and strong moral character is not to isolate him, but to teach him how to meet and successfully resist temptation.

The recess question has been set in its true light by Dr. William T. Harris,[2] in an able and sound piece of pedagogy, the substance of which is summarized in the following paragraphs quoted from its conclusion:

> The recess has been established by the practical wisdom of the past school management, and it seems to meet certain physiological requirements of the young and growing individuals for whom it is appointed in a better manner than any other device yet proposed can do.
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> The moral argument used against recess applies against association in coming to school and in returning from it, as well as in remaining at the noon intermission, but is not of force where it is used, because the recess is the only interval where the pupil is out of school and yet completely under the control of the teacher. The teacher has no other opportunity so good as the recess wherein to teach the pupils to treat

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[1] Rochester, Troy, Albany, Oswego, Newburgh, Woburn, and Newport.

[2] Journal of Education, June 28, 1883.

> one another politely, by repressing the rudeness, personal violence, profanity, and obscenity that will break out, but must be eradicated. Before school, after school, and at the noon intermission the province of the teacher's authority overlaps that of the parent, and the power of the teacher is lamed.
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> But, even were the influence of the recess an immoral and dangerous one, the necessities of physiological laws and of the personal authority of the teacher depend so much on the observance of recess that the direct moral evil (were it far greater than supposed) would be insignificant in comparison to the evil from the other source, which endangers the whole moral structure of the school.

The no recess plan is a contrivance which relieves teachers from trouble and responsibility to the detriment of the pupils, and yet it is a contrivance of such a nature as to secure the general approval of teachers and pupils; hence the testimony of teachers and pupils in its favor should be taken with large allowance or thrown out altogether.

This reactionary movement against the recess is probably owing, in the main, to the sweeping substitution of women for men as teachers and principals even of large mixed schools. The oversight and management of grammar school boys at recess is a duty for which women are not well adapted, which they usually perform with reluctance, and from which they naturally desire to be relieved.

The true remedy, therefore, for the evils of recess, is not the no recess plan, but the employment of a sufficient number of judicious male teachers to manage the recess of boys in a proper manner.

Dr. Hancock, superintendent of schools of Dayton, Ohio, in speaking of this subject in his report, remarked as follows:

> The best ventilated school building ever constructed is not so well provided with pure air as all outdoors; and no throwing up of windows, no free gymnastics indoors, can compensate for spontaneous and exhilarating exercise in the unrestricted atmosphere of the playground.

In the latest report (1883) of Mr. George Howland, superintendent of schools of Chicago, an experiment in the mode of conducting recess is mentioned as follows:

> In many of the schools a change has been made with excellent results, the pupils of the first floor passing out and returning to their rooms, and then those of the second and third floors in sucession. By this method time is saved to the individual classes, the smaller children are less liable to be injured by the larger ones, the school yard is much less crowded, and both teacher and pupil relieved of much annoyance.

AGE IN SCHOOLING.

With remarkable uniformity the organization of our city school systems is based on the assumption that pupils should terminate their elementary instruction at the age of fourteen years—that is, at the close of the fourteenth year. This is a just and wise assumption; it has its foundation in reason and experience. In France and England pupils are expected to finish the elementary course one year earlier. But it is believed to be understood in those countries that this limitation is only a temporary arrangement, and that in the near future the elementary instruction will be extended over another year's course. In the other leading educational countries of Europe the completion of the fourteenth year is quite uniformly fixed upon as the age for going out of the elementary school. In regard to this matter our systems are no doubt in theory right. Fourteen is undoubtedly the true age for the girl and boy alike to take the first new departure in life, either by entering upon a high school course, a course in industrial training (either theoretical or practical), or by engaging in some manual occupation to earn a livelihood. And this limitation seems to be determined by three considerations:

(1) The mass of pupils must gain their livelihood by the work of their hands. That being the case, experience has proved that on the average fourteen is the best age for beginning the apprenticeship to manual labor. As a rule the longer pupils are kept in school after this period the less inclined will they be to submit to the inevitable drudgery of manual labor.

(2) On the other hand, fair schooling advantages up to this age will afford that degree of instruction which it is considered obligatory on the part of the state to insure to all youth.

(3) If properly instructed in the elementary course, the pupil is sufficiently equipped, both in respect to acquirements and mental development, to grapple with the more scientific course of instruction provided in the high school.

But, although right in theory, our systems fall far short of conformity to this ideal standard. On the one hand, the vast majority of pupils are withdrawn from school before reaching this age and before acquiring a competent elementary education. On the other hand, there are many pupils of both sexes still enrolled in the grammar schools who are fifteen or sixteen or even seventeen years of age.[1] This ought not to be; where pupils cannot and do not finish the grammar school course at fourteen years of age, making due allowance for exceptional cases, it may be safely concluded there is something wrong in the system. I say *system*, meaning thereby the agencies above and beyond the control of individual teachers, primarily the administration and supervision and secondarily the programs, text books, methods of teaching, required classification, examinations, promotions, and graduations.

INSUFFICIENCY OF ACCOMMODATIONS.

The rapid growth of city population has made it very difficult for many cities to keep pace in the supply of school sittings with the increase of children waiting to be instructed in the schools. So great is this difficulty in not a few important cities that inadequacy of school accommodations has become a chronic evil. As a mitigation of this evil the makeshift has been resorted to of limiting the attendance of a portion of the pupils to one session a day. In respect to this matter the annual report for 1883 of the president of the Chicago school board, Mr. Norman Bridge, speaks as follows:

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[1] In Boston 2,800 boys over fourteen years of age in grammar schools.—(Superintendent's report, 1883.)

> Notwithstanding a considerable increase in school accommodations during the year, by reason of the opening of new buildings, there were 3,675 more pupils than the previous year who could gain admittance to school but half of each day, the total number thus deprived of their full school privileges being 12,919.

In referring to the same subject the president of the New York board, Hon. Stephen A. Walker, says in his report of 1881:

> At the present time the school population of this city exceeds available school accommodations by several thousands. * * * Many of those who think New York public schools cost too much are not aware that at the present time the compulsory education act and the act which declares that "All children between the ages of five and twenty-one years" residing in this city "shall be entitled to attend any of the common schools therein" cannot be enforced in some parts of the city because the schools are not large enough or numerous enough to hold all the scholars who wish to enter them. During the year 1881 9,189 children were refused admission to the schools for want of room to hold them.

In Philadelphia the insufficiency has grown to alarming proportions. The president of the board, Hon. Edward T. Steele, states in his report for 1882:

> When each of the sections was requested to furnish an estimate of the additional buildings required, it was made clear that over a million dollars were necessary to provide the buildings called for by these estimates. * * * There remain [of children between 5 and 15 years of age, inclusive] 60,000 children more than appear on our records of school attendance. With the most liberal estimate of children attending private schools, it is apparent that there are large numbers of children who are not attending school and for whom there are no accommodations.

The superintendent of the same city, Mr. James MacAlister, in a more recent report, says:

> It is pretty certain that there are at least 20,000 young children in Philadelphia who do not attend school because there is not room enough for them in the public schools, and the number may be much greater.

Passing now to the Pacific coast, we find that in San Francisco, a city noted in former years for liberality in public school matters, the situation is no better than in the cities already referred to. In his last annual report (for the year ending June 30, 1883), Superintendent A. J. Moulder discusses at length the great evils suffered by the schools in consequence of the lack of accommodations. The drift of his remarks may be gathered from the following quotations:

> Nearly all our schools are full to their utmost capacity. Most of them are overcrowded; and in many cases principals, in their anxiety to gratify parents, have admitted pupils far beyond either the legal or the reasonable limit; and still they come! * * * There are many classes in the department containing sixty-five, seventy, seventy-five, and even eighty pupils, many of whom have to be packed into the spaces around the walls and on the teachers' platforms. * * * We need the support of all our citizens, but if we alienate any considerable portion by refusing them accommodations for their children, we not only do them great injustice, but we excite an antagonism against the more fortunate who have secured admission for their children. * * * Where are the means to come from to build the new school-houses shown to be imperatively needed?

To this vital question the superintendent is able to give no satisfactory answer, as he finds that the funds at the disposal of the board are only sufficient to defray the current expenses of the schools; and he strongly deprecates the proposition to save money for buildings by reducing the salaries of teachers. Many other cities might be cited where the schools are suffering from insufficiency of accommodations; but insufficiency is believed to be the exception and not the rule. The city of Denver deserves to be mentioned as an example of a very young city of marvellously rapid growth of population, which has courageously and successfully met the demand for school accommodations sufficient for all its schoolable children, and in quality these accommodations, as has been stated elsewhere, are of the first order. Among the cities of the first order St. Louis may be mentioned as one which has successfully grappled with the problem of school accommodations. In a recent report the president of the board states that the funds of the board "are ample for all necessary school accommodations required now or in the near future. * * * There is now, happily, no question of the financial ability of the board to provide all necessary school facilities." The school law of Massachusetts, as already stated under another head, empowers school boards to provide needed temporary accommodations if their request for the same is not complied with by the municipal authorities. This provision of the statutes has proved a sure guarantee against the evil of insufficiency of accommodations. Where the school board is invested with such authority, it is never necessary to limit attendance to the capacity of the school-houses erected or to submit to the evil of chronic overcrowding.

In Boston it appears by the last annual school report that the whole number of seats in all the school-houses was 56,730, while the average membership—that is, the average whole number of pupils belonging to all the day schools—was 54,451, showing a surplus of 2,279 seats.

The rapid growth of urban population in all parts of the country has of course rendered necessary a correspondingly rapid increase of school accommodations, and although there are not a few cities where this necessity has been only partially met, on the other hand, in general, cities of all classes and in all sections of the country have made liberal sacrifices to provide the requisite school accommodations.

SCHOOL-HOUSES.

Our city school-houses are at once our glory and our shame. Considering the vast aggregate expenditure for the edifices derived from the voluntary taxation of the people, considering how large a number of them are fairly well adapted to the purposes for which they were designed, and considering the still greater number of them as possessing certain peculiar features of excellence, we may justly claim credit for our cities on the score of what they have done in this direction. And we may point with especial pride to the marvellous enterprise of the new towns throughout the West, especially the far West, in providing commodious and costly school buildings. Witness the grand high and grammar school-houses of Omaha and Denver. Even at Cheyenne the visitor will find the children well accommodated in a spacious, well ventilated, well lighted, and well furnished brick school-house. In 1882, I found in the city of Durango, Colo., whose oldest dwelling was only eighteen months old, a noble two-story brick school-house, designed with good architectural taste and spacious enough for the accommodation of from three hundred to four hundred pupils.

But on the other hand there are in our school edifices, as they stand to-day, numerous mistakes, defects, and faults in matters relating to convenience, health, safety, and taste, which might have been avoided and ought to have been avoided. The same money might have given us much better school-houses, both in respect to beauty and utility. Much less money might have given us buildings just as good, not only for all practical purposes, but also in respect to architectural effects. These facts are far from creditable to us as an educated people.

No doubt great progress has been made in respect to city school-houses during the last thirty or forty years. To appreciate this it is only necessary to refer to some of the old landmarks. Horace Mann's memorable report on school-houses, of the date of 1838, contains a plan of the Wells grammar school-house in Boston. It is given as the best known type of a city grammar school-house. The accommodations consisted of two long halls, one above the other, each containing seatings for two hundred pupils, facing the windows of one of the longer sides. The platform extended the whole length of this side, upon the middle of which was placed the stove. There was no recitation room, no clothes room, and no appendage whatever to the large room, except a contracted entry and stairway and a small lobby for the principal's use. The building was three stories high, the ground story containing a ward room and a primary school room. Mr. Mann called attention to the fact that the pupils were seated facing the strong light and that the seats had no backs. The desks were double. This was the model school-house of forty-five years ago.[1]

Place by the side of this picture the best grammar school-house of the present day, with its spacious corridors, its broad and easy stairs, its well proportioned and well lighted class rooms, its convenient clothes rooms, its teachers' rooms and wardrobes, its grand assembly hall, its single desks and chairs, its effective heating and ventilating apparatus, and we see how great has been the advancement.

What is the present character of the average city school-house, the building that we most commonly find in visiting the schools of any city? It is but just to say that this average building is, on the whole, quite comfortable and commodious, and may be called a fairly good school-house. The origin of its type may be traced to the Quincy school-house in Boston, which was dedicated thirty-six years ago. The erection of this building was a veritable new departure in school architecture in this country, being designed to accommodate a new type of organization;[1] up to this time the large hall plan typified by the Wells building had been modified only by the addition of one or more recitation rooms. The ground plan of this building, which was designed for boys only, was a rectangle, with small wings on the longer sides for entries and staircases. These wings were connected by a corridor crossing the main floor, with doors on either side opening into two school rooms and two clothes rooms, the school rooms being located in the corners of the building, each being lighted by four windows on adjacent sides, two on a side. Three stories contained twelve of these school rooms, the fourth story was finished as a hall, 80 feet long, 60 feet wide, and 16 feet high, with settee sittings for 700 pupils. With the exception of some of the largest Atlantic cities, the grammar school houses in the cities of the Northern States, from Maine to California, are of this type, with various modifications. The essential features consisted, first, in giving a separate room to each teacher; second, in grouping a sufficient number of these rooms in the same building to accommodate pupils enough for a good classification; third, in the provision of an assembly hall spacious enough to seat all the pupils accommodated in the building. Perhaps the most common modification of this plan is that which dispenses with the fourth story and its assembly hall. This modification, with some minor improvements, was closely adhered to in St. Louis during the superintendency of Dr. Harris, who, in his final report of 1878–'79, thus sums up his views of the matter:

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[1] This building was replaced by a modern structure in 1868.

> (1) It is the policy of the board to build twelve-room buildings, three stories in height, having four rooms to the floor, and each one placed in a corner so as to get light from four large windows placed two in the rear of the pupils and two on the left side. Of late it has become the practice to group schools near each other on the same block, if possible, and place the whole group under one principal, thus giving him charge of twenty or more rooms. The school yards usually contain about 22,000 square feet, of which about 6,000 feet are covered with the buildings.
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> (2) These buildings are furnished with "combination furniture," each seat adapted to two pupils. Each room seats about sixty pupils, if in the primary grades; fifty if in the higher grades of the district schools.
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> (3) The two rooms on either side of the hall which runs through the house, dividing it into two parts, are separated by movable partitions, so that they may be united for general exercises, such as singing, &c.

The Peabody school-house is the representative building of this class in St. Louis.

This plan has important merits. It is very economical, but it can hardly be regarded as the best yet devised. The Jefferson school-house in St. Louis is a duplication of the twelve-room building, the two being connected by a gallery or narrow structure containing an entry and staircases. The buildings are sufficiently separated to allow the free entrance of light on all sides. This curious device is a step towards what we regard as the type of the future school-house, as will be seen further on. But it is objectionable on the score of its size, as it is intended to accommodate thirteen or fourteen hundred pupils, which is too many to bring to one building.

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[1] Plan and description in Barnard's School Architecture, 1854, page 202.

Another modification of the Quincy type found in many cities consists of a structure three stories high, having six school rooms on a floor, or six on the two lower stories and an assembly hall with two or more rooms on the third floor. Excellent examples of this modification are found in Hartford, San Francisco, Chicago, Cleveland, Boston, and elsewhere. The Case school-house, in Cleveland, which belongs to this class, was represented in the report of the French Educational Commission to the Centennial Exposition as being the best American grammar school-house which the commission inspected. Although this building has some peculiar merits, it is not without grave defects which should be avoided. The gravest is the darkness and closeness of the corridor in the centre of each floor. This is a common defect in this modification, and is noticeable in the girls' high school in Boston; but in the Case school the fault is marked in the extreme. Besides, it is without the assembly hall, and the lighting of the rooms is not in accordance with the most approved plan of the present day. The peculiar merit of the excellent school-houses in Denver is the absence of the above mentioned common defect in respect to corridors. The Gilpin school-house in that city, which I inspected in 1882, two stories high, with six rooms on a floor, is an admirable specimen of this class. In the Whittier school house, since erected, some further improvements have been introduced. School-house building in this wonderful young city has been conducted from the first by the board and superintendent (Mr. Aaron Gove), aided by the accomplished architect of the board (Mr. Robert S. Roeschlaub), in the most judicious and successful manner and with the strictest regard to economy, as is evident from the exhaustive report on the subject published by the board in 1883. The original New York school-house was three stories high, each floor being occupied by a separate school, viz, the lowest by a primary school, the middle by a girls' grammar school, and the upper by a boys' grammar school. The characteristic feature of each floor was a spacious assembly hall, adjacent to which were a number of contracted and rather poorly lighted school rooms. In the course of the development of the system, the schools that were originally grouped in the same building have been provided with separate and independent buildings. The type, however, has been preserved, i. e., the grand assembly hall as a characteristic feature of each building, to which the essential requirements of the school rooms have been somewhat sacrificed. In the best buildings, however, more recently erected, the school rooms have been much enlarged and improved. The New York school-house seems to form a class by itself. It has not been imitated to any extent by other cities. The school-houses of Brooklyn and Baltimore constitute another class, which is only one step removed from the type consisting of a single large hall. That step consists in dividing the large hall into school rooms by means of movable glass partitions. This plan seems to be founded on the twofold idea of saving expense by making the same floor space answer the purpose both of school rooms and an assembly hall and of enabling the principal to inspect the doings in all the class rooms without leaving his desk. But the most that can be said in favor of this plan is that it is an extremely cheap mode of providing shelter for scholars. Philadelphia is remarkable as having no general policy in reference to school architecture, owing to the fact that the buildings are erected by the local school boards. In external appearance its buildings are in many cases quite attractive, and some of the buildings, such as the H. W. Haliwell and Thaddeus Stevens, fairly belong to the first class. There are others, however, which must take a low rank; one of these is of such preëminent badness in respect to the cardinal requirements—regard for health, convenience, and safety—that, considering the circumstances of its erection, special reference to it seems to be demanded in this survey of the character and tendency of our school architecture. It is in the second city in the Union; it was not erected back in those times when good models for imitation were difficult or impossible to be found; it is a new structure, having first been occupied in the Centennial year; it was preceded by such buildings as the Haliwell and Stevens, in the same city; its site lies between Independence Hall and a marble city hall of surpassing grandeur, costing many millions. Its utter wretchedness of plan was not necessitated by scantiness of means, since its walls are of handsome and costly stone work and its whole exterior finish is sufficiently ornate. Its ground outline is nearly that of a square. As the plan of its three stories is identical a description of one will suffice. In one corner is a teachers' private room, in each of the other three corners are an entry and staircase. The rest of the floor space is occupied by four school-rooms so arranged as to form a cross; three of these rooms are lighted only by means of a large bay window at one end, within which is located the teacher's platform; a fourth is lighted by two moderate sized windows at one end, the platform being placed in front of one of them. The rooms open into each other in the rear. The two smaller rooms are 22 by 26; the two larger 25.6 by 26. Comment on the features of this plan would seem to be superfluous; its existence is proof of a defect in the system of administration. This specimen of school architecture will appear the more surprising when it is remembered that it came into existence after the board of education of Philadelphia had caused a thorough sanitary examination of the school-houses and school children in that city, and had printed a report of surpassing interest on the subject, comprising the tabulated results of the inquiries submitted to teachers and scientific experts. Of this document I remarked eight years ago:

"The Philadelphia board deserves the highest credit for thus boldly exposing the sanitary defects of the schools under its charge."[1]

It may be that there are several cities where a school-house belonging to the same category may be found; only one, however, of recent construction has come under my observation, and this is in the enterprising and flourishing city of Buffalo, and in one of its best sections. The main building is oblong in shape, with a long, narrow wing on either of its long sides. The lower floor is arranged as follows: A class is crowded into each of the narrow wings; the main floor is divided into three apartments; in one end are seated the pupils of the upper grade, with only light in front. In the apartment at the other end of the floor the pupils have light only at the back. The class in the middle has the four classes already mentioned on the four sides of the space which it occupies. All its light is secondary, the greater part of its very scanty supply coming through the glazed partitions which separate it from the rooms in the wings. The accommodations on the floor above are of the same description. It seems incredible that such a school-house could have been erected in a city which had the educational enterprise and liberality to secure the location in its midst of a noble State Normal School.

Three school-houses of the grammar school grade, recently erected in three important representative cities—Providence, Denver, and New Haven—illustrate very well the excellences and defects of the best school-houses of their grade in the country. They are all regarded as model buildings in the cities where they stand. In ground plan and general arrangement they all adhere very closely to the old Quincy school type of thirty-six years ago. But they are all three stories high, whereas the Quincy school was four. They are all built of brick and in the material of interior finish are essentially alike and sufficiently good. Each of these buildings contains eight school rooms, intended to accommodate about fifty scholars each. The Providence (Elmwood) building cost about $51,000 and the lot about $8,000 in addition. The New Haven building and lot together cost about $60,000. The Colorado building was built much more economically, the cost of the building, excluding furniture, being about $27,000, or $67 per pupil, while the Providence building cost $127 per pupil, furniture included.

No doubt these buildings all are fairly entitled to be called good; and yet I cannot admit that any one of them is worthy to be regarded as *the* model to be generally copied, because each one has imperfections which might have been avoided or a lack of some excellences possessed by the others. The limits of space will permit reference to only a part of the *peculiar excellences and defects* in each.

The Providence building makes no improvement whatever, in plan and arrangement, on the old Quincy plan. It is essentially the same.

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[1] Thirtieth Semiannual Report of Boston Public Schools, 1876.

In lighting it is inferior to it. In lighting it is unilateral. This is right in principle, but in the application there is a fatal error, the same that was made in Boston in the Rice and Dudley schools when the unilateral principle was first applied, some twelve years ago, by making the rooms too wide, that is, the distance from the windows to the opposite side of the room too great, namely, thirty-one feet, whereas it ought not to have exceeded twenty-five or six. The hall has a seating capacity of 800, which is twice as large as is needed. It has four teachers' rooms 12 by 14; three of these are superfluous. It has no room for library, apparatus, cabinet, or museum. It has no gymnasium. It has no apartments for janitor's dwelling. On the other hand, the corridor is not encumbered with stairs to cut off outdoor light and air at the ends, but its broad stairs of easy grade, inclosed in brick walls, are located in wings on either side of the main building, and the outer doors open *both ways*, thus favoring, as far as possible, safe egress.

Some of the peculiarities of the Denver (Emerson) building are the following: (1) Janitor's dwelling apartments, four neatly furnished rooms for janitor's living apartments (the dryness of the Denver soil rendering the basement available for this purpose); (2) two rooms in the basement are fitted up with lunch tables and benches, one to be used for the boys, having access from the exterior, and one for the girls, having access from the exterior and interior; (3) each school room has attached *two* clothes rooms, one at either end, both of which open into the school room and into the corridor; (4) the corridor is very spacious and is better lighted and ventilated than is usually the case in buildings of the block plan; (5) there is no assembly hall, gymnasium, or room for apparatus, collections, library, &c.; (6) the height of rooms is 16 feet. Fourteen feet is regarded as the maximum height allowable for school rooms; 13 feet may be regarded as the standard.

Of the new building in New Haven (Welch Training School) the architect remarks:

> It was the aim of the committee to embody all the latest improvements and features that experience and experts have shown to be of value in school architecture, and especial attention has been given to convenience of plan, lighting, heating and ventilation, sanitary arrangements, and facility of exit.—(Report, 1883, of Superintendent S. T. Dutton.)

The school rooms of this building are peculiarly excellent. The length is 31 feet and the width 25 feet. On the long side there are four windows, equally distributed, these windows being at the left of the pupils as seated and amply sufficient for light. But there are, in addition, three windows at the rear of the pupils, which seem to be somewhat superfluous, but may be of service under some circumstances. It has two light and airy basement rooms, said to be reserved for evening schools, which would serve extremely well for gymnasiums, one for each sex. The system of heating and ventilating is worthy of special attention. It is thus described by the architect, Mr. L. W. Robinson:

> The building is heated throughout by steam, indirect radiation, and, in combination with the system of ventilation, it is designed to have an ample and constant flow of fresh, warm air to every room in the building in all kinds of weather. The steam coils are placed at the bottom of the heating flues and supplied with fresh air from outside the building through brick air ducts, the outside openings to these ducts being some 10 feet above the ground, so as to avoid the possibility of introducing "ground air" into the building. The warm fresh air enters the rooms at a height of about 7 feet above the floor and finds an egress at the floor on the same side of the room in each case, after making a complete circuit of the room, so to speak, and leaves the building through a proper ventilating flue. By this arrangement the air in the rooms will be changed from five to six times an hour during ordinary winter weather.

It is to be regretted that the architect does not state what he means by a proper ventilating flue or how the effective exit of the foul air is insured.

The buildings we have been considering are, in the main, for grammar schools, but in a large majority of the cities the primary schools are for the most part accommodated in separate buildings. There is, however, no characteristic type of a primary school-house which has been generally adopted. They are of all sizes and descriptions. The individual school rooms in these buildings, however, are essentially the same as the school rooms of the grammar school-houses. In size they vary from the building with a single room to the mammoth primary school-house in New York, with its one thousand or twelve hundred pupils. In general the primary school accommodations are perhaps inferior to those of the grammar schools.

The essentials of a good primary school-house do not differ materially from a good grammar school-house. The difference in size—that is, in the number of rooms—must be governed, of course, by the system of organization. In Boston a policy with reference to the plan of primary school buildings was adopted in 1860 and is still in vogue in its essential features, although some improvements in details, especially in the proportions and lighting of the school rooms, have been introduced, and there has been quite an advance both in mechanical construction and architectural design. In his report accompanying the model plans, drawn under his direction, Superintendent John D. Philbrick says, 1860:

> A building best adapted for our present system of primary organization, where it is fully carried out, would be large enough to accommodate one division[1] of each class[2] in this grade, or six divisions, a separate school room, with its necessary appendages and one teacher, being provided for each division. But a perfect uniformity in the arrangements of the schools of a city is seldom practicable or expedient, although the same *principles* of gradation should be kept in view. Hence, it may be found desirable to erect primary buildings, containing one, two, three, four, six, or eight rooms, the essential features and purposes of all being the same.

The primary schools of the maximum size erected during the last ten or twelve years are limited to eight school rooms each.

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[1] *Division* meaning the pupils in one room under one teacher.

[2] *Class* meaning one of the six primary grades, each having a course of half a year.

In the city of Waterbury, Conn., six buildings have recently been erected for intermediate and primary grades, which are probably on the whole among the best specimens to be found, considering the purposes for which they were intended. In speaking of the erection of these school buildings, the secretary of the State board of education, Hon. Charles D. Hine, in his report for 1884, says:

> The school officers have made a careful study of the subject of school architecture, and in convenience, healthfulness, and economy these buildings are models of schoolhouses for intermediate and primary grades.

It is a fact worthy of notice that the school rooms in these buildings are, in respect to proportion and lighting (two elements of prime importance in the school room), essentially the same as the primary school room referred to above as the standard in the Boston primary schools twenty-five years ago. The architect of these buildings seems not yet to have learned that the square school room, lighted on three sides, can no longer be regarded as the standard pattern. These buildings are all two stories high, three containing two rooms each and three four each. The ground plan of the latter is an oblong, comprising two square rooms, with space between for the clothes rooms. On the middle of either side is a small wing for a staircase, and on the upper floor an anteroom. A marked peculiarity of these buildings is that each room is provided with a fireplace and open grate, where a fire can be kept for ventilation. This fireplace is located in the middle of the side opposite the teacher, and in the rear of the pupils as seated. The plan of the clothes room is a unique contrivance. Each school room has two, located in the corners at either end of the teacher's platform. Each has a window opening upon the platform, so that the teacher from her seat has a full view of the interior of each room. Each clothes room is ventilated through the roof, and the only access to it is through the school room. Each room accommodates fifty pupils and is furnished with the highest type of school furniture, namely, single desk and independent seat.

> The aisles between the desks are wide, so that the teacher can pass through them without brushing against the desks. In some buildings there are passage ways twelve to fourteen inches wide across the room in the rear of every seat, thus separating a pupil entirely from his neighbor. The average floor space for each pupil is unusually large, being about twenty-six square feet.

Here seems to be too much of a good thing. The school room should be neither too large nor too small, but just large enough. It is a grave mistake to suppose that you cannot make a school room too large. Now, twenty-six feet of floor room to each of fifty pupils would amount to thirteen hundred square feet. This would require a room thirty-five feet square. In a square room, the best arrangement of the desks would be in the form of a parallelogram, the longest side being parallel to the teacher's platform. Fifty-six desks, a fair number for a primary school room, arranged in such a room in the best manner, the desks being one foot and a half in length, which is sufficient, the centre aisle being two feet wide, and the six side aisles sixteen inches each, a width sufficient for all practical purposes, would occupy a floor space twenty-two feet by fifteen, or three hundred and thirty square feet. A room twenty-eight feet square and thirteen feet high, with seven hundred and eighty-four feet of flooring, would be sufficient for the accommodation of the fifty-six primary pupils seated as above described, supposing the daily attendance to be fifty and allowing a little over two hundred cubic feet of space per pupil. "At the rear of the room and upon the sides are wall settees, with lifting seats for classes in recitation. These settees are made in short sections and are bracketed to the walls, and when lifted allow ready access to the blackboards." I regard this provision of wall settees as an objectionable superfluity. In a graded school, recitation settees are never needed. Primary and intermediate scholars should never sit at recitation and no recitation should be too long for them to stand.

In these criticisms of some details it is not intended to detract in the least from the great credit which is no doubt due the school officers for the pains they took to make these buildings what they should be in all respects. But, while willingly admitting that they deserve high commendation because they did well, still it cannot be conceded that they combined in their buildings all the excellences that might have been secured for the money which they cost.

The liberality of municipalities in the erection of high school-houses has been remarkable and it seems to be steadily increasing. These buildings are in general architecturally more ornate and pretentious than the buildings for grammar schools, but the average high school-house is not so well planned as the average grammar school-house. There seems to be no type of a high school building which has gained general acceptance. The greater number of the buildings, however, consist of one or more study halls, with recitation rooms attached. In the smallest cities we commonly find a single study hall, where the pupils of all the classes are seated when not engaged in recitation. In addition to this hall, on the same or a different floor, there is the requisite number of recitation rooms. Where the number of pupils is too large for this arrangement we often find a study hall for each grade or class, with recitation rooms attached. In the largest cities for the most part the high school buildings have the essential features of the grammar school buildings which we have described, i. e., a certain number of class rooms, where the pupils are permanently seated, and one general assembly hall. In some buildings these two characteristics are combined, the pupils of the lower classes being permanently seated in class rooms, while those of the upper classes are seated in study halls having recitation rooms attached. It is a difficult problem to adapt a high school-house to all the wants of a large school for both sexes, pursuing three or four courses of study and taught on the departmental plan. It is comparatively easy to devise a satisfactory plan for a school for one sex, pursuing one course of study, as is the case with the high schools of Baltimore, New Orleans, Charleston, Philadelphia, Louisville, New York, and Boston.

A glaring fault of many high school buildings otherwise good is the imperfection of the provision for lighting. This fault is particularly marked in the splendid new high school building in Providence, and the same may be said of the grand new high school building for girls in Philadelphia.

A still more serious, as well as a more general, fault in the plans of existing high school-houses is the arrangement requiring too much climbing of stairs, especially in the case of girls. In a large eastern city a high school-house was recently erected in which the study hall for all the pupils, boys and girls, was placed in the fourth story, while the recitation rooms are placed in the different stories below. This may stand as the type of the worst cases. Baltimore, on the other hand, can boast of affording the best examples of the opposite kind. Her high school-houses for girls are only two stories high, the study hall being placed in the upper, which is reached by broad, easy, and not too high flights of stairs, and the recitation rooms in the lower. A visit to these buildings by Boston school officials many years ago induced them to condemn the four-story plan of grammar school buildings.

BOSTON HIGH SCHOOL BUILDINGS.

As the new high school block in Boston for the accommodation of the two central boys' high schools, the Latin and English high, comprising two connected school-houses nearly identical in plan, is a new departure in our American school architecture and was intended to embody the essentials of a good building, its leading characteristics are here presented:

(1) It is not a solid rectangular block, but is built around a large interior court, divided in the middle by a connecting annex. This, I believe, is the first instance of the realization of this court plan or idea on a considerable scale in any school building in this country. The most serious defects in our large school-houses have resulted from the ignorance or disregard of this idea by our architects. This idea is distinctly foreign in its application to school-houses. The principle may be thus stated: *So plan the building that it shall be in no part wider than the width of a school room with the width of the corridor added.* We have college and other educational buildings with wings at right angles to each other, but not planned in accordance with this principle. The superiority of this *court plan* over what may be called the *solid plan*, which has hitherto prevailed, is found more especially in the advantages it affords for light and air. So important do I consider this idea in school-house building that I doubt whether there can be a first class school-house of any considerable size in which it is not applied.

(2) The school rooms are all nearly identical in character and they all have the essential characteristics of the model school room as described further on; size, 24 by 32 and 14 high, giving 268¾ cubic feet to a scholar on the estimate of forty to a room.

(3) The light and airy corridors, so immensely superior to the corridors in the buildings in the solid or block plan.

(4) The great hall for military drill, which is not a foreign idea. This is the only one connected with a public school, in any country, that has come to my knowledge. A secondary but not unimportant consideration in favor of such a hall is that it may be used as a grand assembly hall for public occasions. The dedicatory services were held in this hall, which was found to accommodate more than three thousand persons.

(5) The gymnasium. This hall is larger, I think, than the great Turnhalle of the city of Berlin. No credit, however, is claimed for its extraordinary size. It is really larger than is necessary, and was made so large simply because, under the circumstances, it cost little or no more than a smaller one would. But a sufficient separate room set apart for gymnastic exercises is so exceptional and at the same time so desirable a provision in our school architecture that this feature is entitled to claim recognition as an important characteristic.

(6) The chemical annex of the English high school, comprising the laboratory and lecture room, both in respect to its detached location and to the completeness of its fittings and equipments, as well as its adaptation to the wants of such a school.

(7) The character of the lecture rooms for natural science, each with two cabinets attached, one for physical apparatus and the other for natural history collections.

(8) The libraries, both in respect to their æsthetic character and their adaptation to the purpose.

(9) The ample provision of conference rooms for teachers and of offices for the head masters and janitors.

(10) The unique and successful provisions for water closets and urinals on each floor.

(11) The treatment of the assembly halls. Their location on the upper floor of the central pavilions made it practicable to give them the requisite size, symmetry, proportion, and lighting. In respect to ornamentation they are yet unfinished. The walls and ceiling will in time be appropriately frescoed and the friezes decorated with sculptured reliefs. But the time has not arrived when we can dream of rivalling in artistic treatment the finest school halls in Europe, of which that of the Akademisches Gymnasium in Vienna and that of the city corporation school of London are the supreme examples.

(12) The drawing rooms of the two descriptions—that is, model drawing and copy drawing—all spacious, perfectly lighted, and having every desirable quality, each being provided with two adjoining rooms, one on either end, of ample size, for the safekeeping of models, copies, &c.

(13) The fire proofing, a characteristic of immense importance, and probably never before attempted to the same extent in this country.

(14) The iron staircases—in respect not only to their fire-proof material and rubber padded steps, but in respect to their spaciousness, being nowhere less than 6 feet wide, and their number and convenient arrangements.

(15) The perfection of the lighting of every part of the vast block and the complete success of the system of heating and ventilation.

(16) Dwelling apartments for janitors.

(17) The composition of the design, the harmonious, symmetrical, and convenient arrangement of all its parts—an arrangement which combines, in a most remarkable degree, both æsthetic and pedagogical requirements. Herein, in my judgment, the genius of the architect[1] is most signally displayed.

(18) It is a double building, two connected buildings on one lot, constituting one block. It should be distinctly understood that this feature is *not to be regarded as a merit;* it has the advantage of economy and convenience in respect to drill hall and gymnasium, but it was justly regarded by the designers of the building as on the whole an objectionable feature. Separate buildings at some distance from each other would have been better. Circumstances necessitated the union.

(19) This building is the result of a serious attempt, under favoring conditions, to combine in one structure all the known elements of a good school-house of its kind as illustrated in school architecture at home and abroad.

The prototype of the Boston building was the Akademisches Gymnasium in Vienna, which ten years ago, it is believed, was the best classical school building for boys among the German speaking people. It was built by the government as a model school, the design being the product of the best architectural talent and the best pedagogical talent working together. It is built on a square lot encircled by streets inclosing a square interior court. The lighting is perfect. No part of the structure is wider than the combined width of a school room and corridor. On the front side, the corridor is very wide, affording width for the hall located on the third floor, which is perhaps artistically the finest educational hall in Christendom.

CITY OF LONDON SCHOOL.

In this conection mention must be made of the masterpiece of English school architecture. This is the building for the City of London School, a classical school for 680 boys between the ages of seven and nineteen, erected by the city corporation since the completion of the Boston edifice. The cost of this building, together with the site, amounted to a million dollars. No pains or expense were spared to make this a model school-house in all respects. Its magnificent site fronts the Victoria embankment and contains 65,340 square feet of land, valued at $475,000. The ground plan is L-shaped; the shorter arm of the L is the hall block facing the embankment containing the library, administration rooms, and grand hall. The longer arm of the L, facing a new side street, is the teaching block, containing hat and coat room, dining room, and covered playground in basement; eighteen school rooms on the first and second floors; natural science school and lecture hall and two class rooms on third floor; a common room and anteroom for assistant masters. A kitchen, with its appurtenances, and apartments for the resident janitor are provided in suitable places.

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[1] Mr. George A. Clough, city architect.

The following are some of its characteristics:

(1) The hall block is in the style of Italian renaissance, enriched with carving and sculpture; it is constructed entirely of Portland stone, except the columns of the windows, which are polished red granite shafts; it seems intended to be as good a specimen of æsthetic architecture as the art of the country could produce.

The exterior of the teaching block which faces a side street leading back from the embankment is of very plain character architecturally, being of faced white brick, with stone strings, cornices, and window dressings.

(2) Fire proofing. The whole of the floors throughout, except those in janitors' bed rooms in the roof, are fire proof, consisting of Portland cement concrete, filled in between rolled iron joists; the lintels throughout are made up of rolled iron joists.

(3) The staircases, as to the number, liberal size, and arrangement. The state staircase leading to the grand hall is monumental, containing niches for statues and marble memorial tablets in the wall panels on either side.

(4) Provision for heating, which is varied to suit the requirements of the different parts of the building. Each school room is heated entirely by Boyd's open fireplace, having a warm air chamber at the back of the stove (fireplace). This warm air chamber has one opening into the outer air and another opening into the room, over the top of the fireplace. The fireplace is in the corner of the room at the righthand end of the master's platform.

The administration rooms and the dining room are also warmed by open fireplaces; the other parts of the building are warmed by coils of hot water pipe.

(5) The school rooms are nearly square, being 24 by 22 and 14 feet and 6 inches high, giving about 200 cubic feet of space per boy; they were planned on the assumption that forty is the maximum number of boys to be accommodated in each; each school room is lighted entirely by a large window on the lefthand side of the pupils, this window being four lights wide, with dividing mullions and a transom. The top lights

above the transom are hung on centres, with Elsley's patent balanced levers for opening and closing the same. In respect to size, shape, and lighting, this school room cannot be considered as equal to those of the Vienna and Boston buildings. The Boston top lights are hung at the base, which is a better plan than the centre hanging.

(6) The admirable grouping of the rooms for the science department of the school, on the upper or third floor, in connection with the lecture hall, which is treated in an admirable manner, both architecturally and pedagogically.

(7) Provisions for dining and lunching the pupils, comprising a kitchen with all its appurtenances in the third story, and a dining room with its appurtenances in the basement, and a counter for the sale of cakes, buns, ginger beer, and other such delicacies for the benefit of the boys who do not take the school dinner.

(8) Two drawing school rooms ingeniously located and having extra high windows.

(9) The great hall, 100 feet by 45, with a handsome open timbered roof 60 feet high to the ceiling, to be used for an assembly of the whole school for prayer each morning. This hall contains sittings for about a thousand persons, and is regarded as the finest hall in the realm, with the possible exception of Whitehall.

(10) School desks. The pupils are seated at dual desks.

(11) Blackboard provision. A large movable, sliding blackboard at the end of the room behind the master.

(12) The corridor of the teaching block extends through the whole length of the first and second floors between the rows of school rooms, and is 3 feet less in height than the school rooms.

(13) Ventilation. Above each corridor is a horizontal foul air passage 3 feet high, connected at one end with a tall upcast shaft from furnace in basement; each school room has two openings close to the ceiling into one of these horizontal foul air passages.

(14) Sliding partitions. Three pairs of adjoining school rooms are separated by sliding partitions.

(15) The liberal size of the open air playground.

(16) The superior covered playground, occupying the whole basement of the hall block and the whole extent of the back side of the teaching block basement, with no masonry obstructions.

(17) Gymnasium. This is a detached building, 75 by 35, 20 feet high to beam, having an open timbered roof, with lantern light extending the entire length of the ridge.

(18) Fives courts, six in number, two being covered in with glass for use in wet weather.

(19) Boys' entrance and cloak room, on the playground level, 48 by 34, having eight doors opening to the street, playground, staircases, and lavatories; warmed by coils of hot water pipes beneath the floor,

provided with gas for dark days in winter, and containing racks with 680 wrought iron hat and coat pegs, each with its own number.

(20) Science master's private laboratory for the preparation of illustrative experiments and apparatus, connected with the lecture hall and apparatus room and also with the class chemistry room, the latter being provided with working benches for a class of thirty boys and furnished with every desirable requisite.

(21) Water closets and urinals. In a separate building most perfect in all arrangements and connected with the main building by a passage-way.

(22) Sanitary arrangements and drainage are unsurpassed in scientific and mechanical construction.

These extended notices of the London and Boston buildings are appropriately placed here in juxtaposition as being the most conspicuous examples of the most advanced theories of school-house building to be found in the English speaking world.

WASHINGTON HIGH SCHOOL.

It is to be regretted that the high school-house recently erected in our National Capital should be in its planning so far behind the times. Its conspicuous absence of merit was not to have been anticipated, considering the high reputation which the city had acquired for school-house building in the erection of the Franklin and so many other good school buildings. The architecture of the exterior of this edifice seems to have been designed as a contrast to the ornate grandeur of the Government palaces. The ground plan is a simple, long parallelogram. It is three stories high and faced with red brick. It is without ornamentation of any description. The first and second floors are alike in plan. A wide corridor in the middle extends the whole length of the building; on either side of this corridor there are four school rooms and a room large enough to be called a hall. On the third floor there are four school rooms, two small halls or drawing rooms, and a large hall extending across one end. Besides the rooms mentioned there are no other apartments for any purpose whatever, above the basement. The school rooms are not patterned after the best model. The water closets are in the basement. The heating is effected by means of direct steam radiation.[1]

REQUIREMENTS OF THE MODEL SCHOOL ROOM.

(1) Shape. It should be oblong, the width being to the length about as three to four, with the teacher's platform at one end.

(2) Size. For primary or grammar school, with register of 54 pupils and attendance of about 50, the room should be about 33 feet long, 25 wide, and 13 high, which gives practically upwards of 200 cubic feet and 16½ square feet of floor space to each pupil.

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[1] It is understood that this building was not planned in accordance with the views of the board of education and superintendent.

(3) Lighting. Four windows on the left of the pupils as they sit, the tops being square and not more than six inches from the ceiling, the bottoms being at least three and a half feet from the floor, equally spaced, not grouped, with transom sashes hung at the base, above the sliding sashes. A window or two in addition at the back is admissible. The size of the windows on the side taken collectively should equal at least one-sixth of the floor space. The highest authorities in school hygiène require 300 or 350 square inches of glass for each pupil.

(4) On the side opposite the windows, two doors with transom windows above, hung at the base, and between these transom windows and on the same line two more windows of the same kind and hung in the same manner.

(5) The wall should be slightly tinted, but not the ceiling.

(6) A blackboard may be between the doors, but a sliding blackboard, back of the teachers' platform, or a portable one on the platform, in accordance with the German idea, would perhaps be better than the profusion of wall blackboard now in vogue among us.

(7) Location of seats. The main rule to be observed in the placing of the seats is to carry them as far as possible towards the window side of the room and as far as possible from the opposite side; the aim being to make the arrangement such that the distance of the outer row of desks from the windows shall not exceed once and a half the height of the top of the window from the floor.

(8) Clothes rooms. There are three kinds of depositories for the pupils' clothes, all of which are more or less in vogue, namely: (1) one room for the whole school or several classes; (2) a room attached to each school room; (3) arrangements within each school room, either wardrobes or racks or pegs on the wall. The second kind is most prevalent and is thought by some to be indispensable; it has important advantages, but its use by both sexes is objectionable; it is difficult for the teacher to maintain supervision over it; it is an important item in the cost of building, and proper provision for it is a difficult obstacle to overcome in planning large buildings: hence, in some cases, as in that of the London school, the large common room is preferable, and provision within the room, as above mentioned, is perhaps to be preferred to the small clothes room, where the number of scholars accommodated in a room is not large. In the Boston school, above described, the third kind is provided, as is the case in the Vienna and other first class European schools.

GENERAL REQUIREMENTS OF SCHOOL-HOUSES.

(1) Height. A school-house should never exceed three stories in height above the basement. The school rooms, as a rule, should not be placed higher than the second story; the assembly hall should be on the upper floor, and so should the rooms for drawing.

(2) Size. A building large enough to accommodate eight hundred pupils should be regarded as the maximum for a school of any grade, whether primary, grammar, or high. For a grammar school, the scholars being from eight or nine to fourteen years of age, the model building should not be designed to accommodate more than five hundred pupils; for a mixed high school the number to be provided for ought to be even less than the normal number for a grammar school. In regard to the size of the primary school-house, it would not be far from the mark to say the smaller the number of pupils it accommodates the better for the pupils, provided the number brought together is large enough to admit of a classification which does not require more than two classes in a room. Small schools are not the cheapest, but if the best results are aimed at, and not the minimum expense, the number of pupils should not exceed that required for a fair classification. The mammoth school must, from the nature of things, be a second rate school.

(3) School furniture. The day of hacked desks is gone. It is now well known that nicely made and well polished desks are easily preserved, free from injury, for many years, even in boys' schools. It is rare to find in our American schools the foot rest, which is regarded by eminent foreign authorities as highly important.

The two modes of seating found in most cities are that of the combination furniture and that with a separate chair. In the former each desk has a seat attached in front; thus the front of each desk serves as the back of a seat. This is the kind of furniture, in its various patterns, which is, perhaps, most extensively used. The desks are mostly double—that is, for two pupils. The other type of furniture differs from the combined by having the chair separate from the desk. The most approved variety of this type has the chair mounted on a single cylindrical iron support. The tendency is to substitute the single for the double desk. It is supposed by some that the single desk requires too much floor space for general introduction, but if the desks are not made unnecessarily large, and if they are placed as near together as convenience will permit, they will require no more space than ought to be allowed, whatever may be the mode of seating. The single desk with the separate chair must be regarded as the best mode of seating. It is desirable, of course, that the height of the chair and desk should be accurately proportioned to each other and to the size of the pupils for whom they are intended. But it is extremely difficult to realize the ideal perfection of this adaptation. There should be at least three sizes of desks and chairs in each room of a graded school. The number of each size can be determined only by experience. There should be at least six sizes to suit all the grades of an elementary school comprising both the primary and grammar grades. The chair should be so placed that the front edge of the seat shall be in the same vertical line with the edge of the desk lid. Our school furniture is, in general, far superior to that of foreign countries in respect to material, design, and workmanship. Its defect consists in the want of a perfectly scientific adaptation of its proportions to the anatomy of the juvenile frame.

(4) The ground plan. If the building is of considerable size the ground plan should not be in the form of a square, parallelogram, or cross. It should be in L form or it should be built on three or four sides of a rectangle; if very large it should have a number of interior courts thus inclosed, after the manner of the Collége Chaptal in Paris, which has five open interior courts; and the ground plan should be nowhere wider than the width of a school room and the width of the corridor added. The corridor should, as a rule, open on one side into the outer air. The school-house planned after this idea is so far a new departure as to constitute a new type, which we may denominate a *court type* or *court plan*. It has already been referred to in connection with the Boston high school block. It is illustrated in the plan of the Prince Grammar School in Boston, which was commenced in 1876 and completed several years later. This type will, I doubt not, ultimately supersede the type which originated in the Quincy School. My reason for this opinion is that it has been adopted in those countries where school architecture has been most thoroughly studied and where the best specimens of school buildings are to be found.

(5) Fire proofing. Only a beginning has been made in this direction. In buildings of more than one story in height this important safeguard ought not to be omitted.

(6) Ventilation. In the building of the court type, having transom windows, as above described, and heating by means of indirect radiation, successful ventilation is easily attained.

(7) Orientating. Wherever practicable the ground plan should be so orientated that the corners of the structure shall point to the cardinal points, thus bringing the sides which receive light to face the southeast and northwest and northeast and southwest. This position insures the admission of the sun's rays in every window at some time of the day. In particular, great pains should be taken to prevent if possible the facing of unilaterally lighted rooms to the south.

> The space devoted to a school should be twice as large as the house, including all contemplated future enlargements, will actually cover. Even this amount of spare land is hardly enough for a playground, but it will at least suffice to meet the urgent demand for free space about a school-house. A belt of 30 feet on all sides that are liable to be overshadowed is the least that should be given in order to secure proper lighting and a free play of air. * * * As regards the amount of playground required, the Germans have estimated it at least three metres for each child, which would give nearly 20,000 feet for a school of 600 pupils.—(Report on hygienic requirements of school architecture, by Dr. D. F. Lincoln.)

The great high school of Omaha is placed in the centre of a square park of sixteen acres which is so elevated as to command a view of the whole of this more than seven hilled city of magnificent distances.

The high school of Denver has a lot large enough to deserve the name of park. But the city of London probably affords the most remarkable example of liberality in providing air space and playground for common schools.

(8) Gymnasium. Every city school-house of any considerable size should have its gymnasium, which may be in the main building or in a separate building. It need not be very large; once and one-half the size of a school room might perhaps be taken as the minimum size. Perhaps none of our city schools has been more satisfactorily provided with gymnastic accommodation than the Hartford high school, which for more than thirty years has enjoyed the advantages of a good gymnasium with all the needed appurtenances and apparatus.

(9) Water closets. If in a detached building, this building should be connected with the school-house by a covered passage. If they are in the basement, arrangements should be made for daily flushing. I have known the plan of dry earth closets in the basement to be tried in several instances with bad results and the flushing plan with good results. In Vienna I visited an elementary school where each school room had its urinal, which was kept in excellent condition.

(10) Entries and corridors must be spacious relatively to the stairs, especially at the foot of the latter. In large houses a width of ten or twelve feet is required. They should be lighted directly from out of doors when possible and the lights should be placed at opposite ends (end lighting not important in buildings of the court type), so as to insure a free, natural ventilation, which on many days of the year, even in winter, is the best for entries. It is hard to ventilate entries that occupy the centre of schools. Of this the Boston girls' high school offers an instance. The doors of the rooms stand open in study time, so that the whole house gets an equable foul atmosphere at about 70° to 74°, and when recess comes the girls, in large groups, stroll about these hot entries unvisited by a breath of fresh air.

(11) Stairs and stairways. Of these Dr. D. F. Lincoln, in his report on school architecture, says:

> They should be fire proof, by which I mean that they should, if possible, be isolated by solid brick walls on at least three sides. Like the entries, they must be lighted from the outside. There must be at least two staircases for a building of the size contemplated here, and some architects will consider three necessary. The width must be at least six feet in the upper story and eight in the lower, and regard must be had that the height of the steps is not too great for children. Spiral stairs are inadmissible, for the steps are very narrow next the well, and if the child falls the descent is very steep at that point. Wedge shaped stairs are inadmissible, for the same reason, in turning a corner; they are common in private houses, but dangerous when crowded. Wells are undesirable on this account, although they have a certain advantage in ventilating the entries. If they are used the staircases are to be sheathed. Balusters are totally unnecessary. The rail should be about four feet above the riser. A staircase which ascends the height of a story without a break is not desirable; one or two landings (half-whole landings is the technical term) should be introduced to afford momentary resting place.

(12) Assembly hall. To New York without doubt belongs the credit of having taken the lead in demonstrating the utility and in developing the capabilities of the assembly hall as a feature of our school architecture. From the first it has been considered in New York not a mere luxury, to be dispensed with at pleasure, but a necessity. If not a necessity it is certainly a very desirable feature. The following from the pen of an eminent French educator shows how the use of the hall impressed the mind of a competent foreign judge:

> After realizing the true function of the American school, it becomes apparent that a large hall or assembly room, designed for general reunions, is really indispensable in an educational system like that of the United States. Nothing is more beautiful and nothing, I am persuaded, exerts a better influence than these grand reunions of children, brought about with a dignity and soberness of manner natural to the Americans when they form themselves into an assembly. To appreciate their effects it is only necessary to see the children of a large school assemble in the hall. They enter step by step, marching in time, generally to the music of a piano, large and small, by classes, in the most perfect order, without any one, either the largest or the smallest, showing the slightest inclination to laugh, to look lightly upon the ceremony, to affect those forward airs which are too apt to distinguish boys of from fifteen to eighteen years of age among us, to say nothing of girls of the same age. Whether the reunion in the hall lasts five minutes or an hour, whether it is an assembly for prayer, for singing, for examination, or for some other purpose, the attitude of the scholars is the same; and we have nothing in our pedagogical organization which is productive of the same results. It is not only discipline, it is reflection; it is a moment, no matter how short, that leaves its mark on character; it gives unity to the school and moulds the whole of the children into a common life. These children, of different age and sex, are affected by this single and short interview in a wonderful manner, difficult to be described. The youngest among them learn from instinct and from the example of those older than themselves respect, steadiness of character, seriousness of manner, an idea of the greatness of the school, and, I am almost ready to say, of the holiness of the place. The oldest engage in the exercises of the youngest. You will see them mark time, go through the prescribed forms for gaining their places, get up and sit down at a given signal, perform conscientiously and without smiling the various gymnastic and calisthenic movements, and defile in a military way in front of the platform, young gentlemen and young ladies, with an air at once serious and good humored. Then there comes a beautiful piece of sacred music, a national hymn, or a school song. The moral effect of all this is immense; it unites all these young hearts in a common love of country, which is a very important matter in the political and moral education of the future citizens of the United States.
>
> It is on this account that it is nowhere a question as to the propriety of these grand assembly rooms in large school buildings, although strangers, seeing them nearly always empty, are tempted to consider them useless.

SOME PECULIAR CHARACTERISTICS OF FOREIGN SCHOOL-HOUSES.

(1) The fireplace in the school room. This feature is, perhaps, peculiar to England.

(2) A feature of the French city school-house is the préau couvert (covered playground), which generally consists of a good sized but not high studded hall on the lower floor. Here the scholars, on coming to school in the morning, deposit their lunch baskets, head coverings, and outer garments. It is furnished with movable benches. Here the

pupils pass the recess in inclement weather, under the surveillance of teachers, and here those who do not go home pass the intermission between the sessions.

(3) The schools in Germany and Austria are usually provided with gymnasiums, either in the school buildings or in detached buildings.

(4) The school-house on the continent, as a rule, comprises apartments for the dwelling of the principal.

(5) It is universally the custom in Europe to provide apartments for the dwelling of a janitor in school-houses large enough to require the services of such an employé.

(6) All the school-houses I visited in Vienna had stone stairs, and I believe this is a feature of all the school-houses in that city.

SCHOOL MUSEUMS.

Agassiz, in his efforts for the promotion of instruction in natural history, was accustomed to reiterate the saying "I hope the time will come when every primary school will have its little museum of natural history." But some time before the great naturalist coined this happy saying the same idea, in a more comprehensive sense, was already embodied in our pedagogical literature.

In 1832, Mr. A. Bronson Alcott wrote:

> To do full justice to the young mind, our school rooms should become museums, imaging forth the variety and beauty of the material and mental world. By such arrangement juvenile interests would be secured, curiosity and inquiry incited, and intellectual attainment and vigor result. The child would feel himself in the presence of objects analogous to the outward sphere, and imbibe the inspiring influence.—(Proceedings of American Institute of Instruction, Vol. II, page 142.)

There we find the idea of the school museum presented in its widest scope; it is not limited to any department of knowledge, but comprises not only specimens of natural history, but productions of art, illustrations of materials in process of manufacture, specimen products of agriculture, miniature implements of all sorts, models and pictures of historic monuments, portraits, coins, &c. The school museum, in this broad sense, is the necessary concomitant of the intuitive method of teaching. Accordingly, where the latter has gained a foothold, we find the idea of the school museum more or less developed. Incipient school museums are now to be found in individual schools of different grades in all sections of the country. In the better class of primary schools it is not uncommon to find a modest cabinet filled with specimens of natural history and sundry miscellaneous curiosities, collected by the enterprising teacher with the assistance of her pupils. Along the seashore shells are apt to form the largest part of the collection; in other localities minerals are most conspicuous. Not a few high schools possess collections of considerable value, especially in the department of natural history.

In grammar schools less progress seems to have been made in this direction than in the grades above and below. There are now in the market excellent sets of minerals, systematically arranged and labelled, especially adapted for use in these schools. In one of the fine common schools of Vienna I saw installed in a good sized room a beautiful museum of technology and of natural history. Each school in the city was allowed from the public treasury a certain sum annually to be expended for its museum at the discretion of the master. As yet no provision of this sort appears to have been made in our city systems to encourage and aid the teachers in this line of progress. It is especially desirable that the grammar schools should be provided with a technological museum, more or less extensive. The nature of such a museum is described in connection with the account of the Tournefort school at Paris. In providing a school with a museum, it is the first step that is the difficult one. A beginning once made and a place of instalment secured, the collection is sure to grow in size and interest and usefulness.

DECORATION OF SCHOOL ROOMS AND ART FOR SCHOOLS.

Closely allied in purpose and utility with the idea of the school museum is the idea of the decoration of the school room. This idea is rapidly becoming general. City school rooms totally destitute of objects intended for decoration are perhaps exceptional. We find almost everywhere that the most naked and unadorned have at least a plant in the window, a picture on the wall, or a decorative drawing on the blackboard. The profusion of plants in some primary school rooms gives them the air of a conservatory. In visiting the schools of Pittsburgh several years ago I was greatly charmed with the taste everywhere displayed by the teachers in the decoration of their school rooms with plants and flowers.

Nearly twenty years ago New York set an example in the decoration of school halls with numerous busts and engravings. Subsequently a committee was appointed by the educational department of the Social Science Association to consider and report on the subject of the decoration of school rooms, with a view of introducing an æsthetic element into the educational system of the United States. The immediate result of this movement was the decoration of the hall of the girls' high school-house in Boston, which was then building, with a selection of casts from antique sculpture and statuary. The expense of the purchase, transportation, and placing of the casts was met by the subscriptions of a few members of the association, with the aid of some persons not members, on condition that the hall should be finished at the expense of the city with special reference to the plan of decoration which had been decided upon. For a series of slabs from the frieze of the Parthenon an architrave was constructed resting on Doric pilasters. Between these pilasters the walls were painted of a color suitable as a background and brackets or pedestals of proper form were provided for the busts and statues. Casts, if selected to express the highest laws of form and the purest types of beauty, could hardly fail to produce a favorable effect upon the mental and moral training of the young, especially if associated with their studies; that is, their daily efforts to improve themselves. The collection was not made for a single school or for a single city, but for every school and every town or village where a similar attempt to extend the culture and beautify the environments of our educational system is possible. (For a descriptive list of the casts, the place of purchase, and a statement of the cost of each, see Appendix E, page 206.) The theory of æsthetic culture in schools, upon which this plan of decoration was based, is essentially the same as that propounded and so ably advocated by M. Ravaisson, of France, under whose direction a series of magnificent phototypes of antique sculpture and statuary have been prepared for the decoration of schools.

If the school room is adorned with works of art the pupils' ideas are associated with things of beauty as well as utility. Ruskin, in speaking of the decoration of the school room with busts and paintings, says:

> How can we sufficiently estimate the effect on the noble mind of a youth, at the time when the world opens to him, of having faithful and touching representations put before him of the acts and presences of great men; how many resolutions which might alter and exalt the whole course of his after life, when in some dreamy twilight he met through his own tears the fixed eyes of those shadows of the great dead, unescapable and calm, piercing to his soul, or fancied that their lips moved in dread reproof or soundless exhortation.

Falling upon this fine passage of Ruskin, at once so poetic in conception and so sound in doctrine, I was naturally reminded of a striking example of the realization of the idea it recommends—the most striking example perhaps which has come under my observation—namely, the decoration of a remarkable Jesuit school of the highest order, which I visited some years ago in the city of Paris. Everywhere in this great establishment, which is shut in from the outside world by high walls even more effectually than Girard College, were decorative representations in sculpture, paintings, engravings, and sun pictures of men and deeds, calculated to inspire the pupils with the spirit of the institution and stimulate them to the utmost efforts for the attainment of the objects which it proposes. It is perhaps scarcely necessary to say that this example is rendered especially important by the fact of the well known success of the Jesuit schools in determining the character of their pupils.

It is remarkable that in the country where such an example was found in a private establishment and in a country so eminent for its cultivation of art in all its departments almost nothing had then been done through the agency of the common schools to promote by the indirect means under consideration the moral and æsthetic culture of the masses of the people. Since that time, however, a very important movement has been made on this line of improvement. At the suggestion of M. Buisson, director of primary education, the minister of public instruction appointed a commission on the decoration of schools and art for schools,[1] consisting of thirty eminent men. This commission was charged, in general, with the duty of studying the means of introducing into the system of instruction in all its grades the æsthetic education of the eye. The results of the labors of the commission, which were extended over the period of nearly a whole year, were summed up in a remarkable report to the minister by Charles Bigot.[2]

This report begins by presenting in a felicitous and forcible manner the argument in favor of combining in education the cultivation of the sentiment of the beautiful with the sentiment of the true and the sentiment of the good, maintaining that nothing great has been done on the earth except by the effect of one of these three sentiments, each having its apostles, its heroes, its martyrs. "A grateful posterity places equally in its Pantheon, and honors with a pious worship, scholars, artists, saints, these glorious examples of humanity."

The cultivation of the sentiment of the beautiful by means of poetry and poetic and artistic literature was never wanting in the schools of the higher grade. More recently provision had been made for extending culture in this direction by the general introduction of instruction in music and drawing. The especial task of this commission was to devise ways and means for improving, as far as practicable, æsthetic education through the eye, not by specific, direct instruction set forth in programs, but by the operation of the environments of the school and the artistic character of its appliances. These environments and appliances were considered by the commission mainly under four heads: (1) The æsthetic character of the school building, including its artistic ornamentation, both exterior and interior; (2) the furnishing of objects of art for the observation and study of the pupils, such collection of objects belonging neither to the appliances nor to the architectural decoration, constituting the school museum of art; (3) the rewards of merit and prizes; (4) illustrative apparatus, and particularly the department of transparencies. Here it was deemed that scientific accuracy alone was not sufficient, but must be accompanied with elegance of form and harmony of color, so far as the nature of the object would permit. This commission examined and reported upon the propositions and objects submitted by publishers and artists, comprised under the four categories above enumerated.

The essential outcome of the labors of this large and very able commission, besides the valuable contribution to pedagogy comprised in the observations and discussions of their report, was the institution by the minister of a permanent commission for the promotion and perfecting of this department of public instruction.

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[1] Commission de la décoration des écoles et de l'imagerie scolaire; appointed June, 1880.

[2] Presented April 11, 1881; printed in the Manuel général de l'instruction primaire, July 23, 1881.

This interesting movement of the educational administration of France has attracted the attention of educators on the other side of the Channel. Some time ago a committee was appointed in Manchester, England, "to remedy the deficiency of English school arrangements in the means of awakening a sense of beauty and an interest in art."

The functions assigned to this committee, which are similar to those of the standing French commission, are as follows:

> (1) To negotiate with art publishers for the purchase of prints, photographs, etchings, chromolithographs, &c., on advantageous terms, and to supply them at the lowest possible price to schools.
>
> (2) To reproduce from time to time, by one or more of the processes familiar to engravers and printers, carefully selected examples likely to have a large circulation.
>
> (3) To print a descriptive catalogue and price list of the examples which the committee are prepared to recommend to the notice of schools.
>
> (4) To present to schools, in special cases and as the funds of the association shall allow, small collections and books explanatory of them.
>
> (5) To arrange various loan collections, to be placed at the disposal of schools on such terms as may prove convenient.
>
> (6) To bring together a number of examples to be exhibited in a suitable place as a tentative model of a standard collection, the collection to consist of (*a*) pictures of the simplest natural objects, birds and their nests and eggs, trees, wild flowers, and scenes of rural life, such as town children seldom see and country children often fail to enjoy consciously until their attention is specially called to them; (*b*) pictures of animals in friendly relation with human beings, especially with children; (*c*) pictures of the peasant and artisan life of our own and foreign countries, incidents of heroic adventure, &c.; (*d*) pictures of architectural works of historic or artistic interest; (*e*) landscapes and sea pieces; (*f*) historical portraits; (*g*) scenes from history; (*h*) and last, but by no means least, such reproductions as are available of suitable subjects among the numerous works of the Italian, Dutch, and modern schools.

More recently an association has been organized in London, with Ruskin as president, with a similar object in view, namely, "to bring within the reach of boys and girls in our board and other schools such a measure of art culture as is compatible with their age and studies."

The committee on drawing of the Boston school board (Mr. C. C. Perkins, chairman), in their report for 1883, called attention to these movements in Manchester and London and suggested the desirableness of organizing for the same purpose an "art for schools association" in that community. In this connection the committee remark:

> We hold, with the English committee, that "a love for the beautiful is, perhaps, only second to religion as a protection against the grosser forms of self indulgence, and that it can best be kindled at an age when the mind is especially susceptible to the influence of habitual surroundings;" and on these grounds we look for the sympathy, although we cannot ask the coöperation, of the board in our proposed effort to found an art for schools association in Boston; and this, not only because the decoration of school-house walls with good prints and photographs will bring good influences to bear upon the pupils, but also because these will materially aid teachers of history, geography, and natural history as objects of reference. The decoration of the exhibition hall of the girls' high school with casts and the prints hung up in certain grammar and primary school class rooms show that the masters and teachers are, in many cases, alive to the importance of the subject and ready to aid in any well organized effort to promote its further development.

The committee might have appropriately referred in this connection to more recent and not unimportant contributions of works of art to the schools under their charge, the most valuable of which decorate the main vestibules of the new school-houses of the Latin and English high schools. In the latter a beautiful group in marble, the subject being "Flight from Pompeii," has been placed by one of the earliest graduates of the schools (Mr. Henry P. Kidder). In the Latin School vestibule stands a fine marble statue by Mr. Richard S. Greenough, a Latin School boy, which was procured by the graduates of the school to honor those who had honored her, and especially to commemorate those who had fallen in defending their country. This statue represents the alma mater of the school resting on a shield which bears the names of the dead heroes and extending a laurel crown to those who returned from the war.

PEDAGOGICAL LIBRARIES.

Pedagogy is used to designate that province of knowledge which comprises the philosophy, science, art, and history of education. The cultivation of this knowledge is a necessary means of educational progress. Pedagogy teaches how to design school-houses, how to determine the subjects of instruction and arrange them in rational and harmonious programs, how to impart instruction, how to govern so as to produce self control, how to train and to develop the faculties harmoniously, and how to superintend and administer educational institutions and systems. It analyzes and unfolds the intellectual, moral, and physical nature of the being to be educated. It treats of education in its social, political, and economical relations. It ascends into the region of speculation and investigates the theories touching the destiny and the true ends and aims of man. It gathers up the history of the experience of the race on the subject of education for the guidance of present and future generations, thus furnishing the means of obtaining a knowledge of the best things that have been said, thought, or done for the promotion of human culture.

Advancement in education and the cultivation of pedagogy must go hand in hand. As a rule, teachers and directors of education are successful in proportion to the degree of their mastery of the knowledge of their profession; that is, their knowledge of the best things that have been said, thought, or done touching the business in hand. The acquirement of this knowledge comes mainly from the study of pedagogy. From the want of adequate pedagogical knowledge on the part of school boards, superintendents, and instructors, the nation is wasting yearly millions of money and the teaching force of teachers and the learning force of learners in amounts incomputable and inconceivable. Hence, in my view, too much cannot be done to promote pedagogical study. The normal schools are the natural centres of this study. It is one of their leading functions, if not the principal one, to initiate their pupils into it, to give them good guidance in it, and to inspire them with zeal in its pursuit. It must be owned, however, that up to the present time this essential function has been too much neglected, and to this neglect may, I think, fairly be attributed the general neglect of this study among teachers and educational officials. The fact of neglect is proven by the non-publication and non-sale of educational works. Publishers are prudently reluctant to issue pedagogical books, because they know the meagre demand for them.

The unique thing in American pedagogy, Dr. Henry Barnard's American Journal of Education, which was begun thirty years ago and now comprises thirty imperial volumes, has kept its self sacrificing editor and publisher on the brink of bankruptcy for lack of buyers. Of this great publication M. Buisson thus speaks in his Dictionary of Pedagogy:

> No writer during the past half century has brought together, so far as we know, such a vast mass of materials, of information, and of studies of every kind belonging to pedagogy as has Dr. Barnard. His writings, his official reports, those works he has translated or summarized, the innumerable works he has succeeded in securing, classifying, and editing, form a true pedagogical encyclopædia, and are all the more remarkable because all countries and all times are there represented.

In the new edition of the Encyclopædia Britannica, in the article "Education," by Oscar Browning, we have this estimate of the work:

> In English, though we have no investigators of the history of education, we have a fairly large literature on the subject, but it belongs almost exclusively to the United States. The great work of Henry Barnard, the American Journal of Education, in twenty-five volumes, has valuable papers on almost every part of our subject, many of them translated from the German; but there are also original papers on our old English educational writers and extracts from their works. This is by far the most valuable work in our language on the history of education.

This work, the admiration of the international juries at the universal Expositions at Vienna and Paris, was by both crowned with the highest honor, and yet it finds only here and there a solitary buyer. It is not even in the libraries of the normal schools, with some honorable exceptions. Few are the public libraries that can boast of the possession of a complete set. Very few are the superintendents of schools who can point to it on the shelves of their office libraries. How few are the school libraries in which it is found! How few are the teachers, even of the highest grade, whose private libraries are enriched by this educational treasure! The great bulk of teachers have never seen a copy of it and probably never heard of it. In view of these facts, is it not just to say that this publication is at once our pedagogical glory and our pedagogical shame?

One of the regrettable and pernicious results of this general neglect to cultivate the study of pedagogy is found in the dense and profound ignorance of the subject displayed in so many essays and editorials on educational topics in our newspaper and periodical publications by amateurs and laymen, who presume to instruct the public in what they themselves have not as yet begun to learn. Here we find a good illustration of the truth of the observation of M. Michel Bréal in his excellent little book entitled Quelques mots sur l'instruction publique en France. This eminent savant and pedagogue says:

> It happens, when a science is not regularly cultivated in a country and has not its authoritative writers or its special public, that everybody thinks he has a right to give his opinion on the matter. It is never with impunity that men devoted to a specialty abandon a nook or corner of the domain of thought: the ignorant crowd precipitate themselves upon the spot and charlatans take possession of it to display there their gimcracks.

Educational history is the only sure antidote to educational charlatanism. Enlightened friends of educational progress, therefore, cannot but regard with peculiar interest such movements and provisions as have for their object to aid and encourage pedagogical study. The most practical means for this end is the multiplication of libraries of sound educational books. It is believed that we are entering, that we have indeed already entered upon a new era in this respect. A demand for educational books is beginning to spring up. I hear that a great publishing house has undertaken to issue an educational library. Some recent sound English publications have met with considerable sale. Nuclei of pedagogical libraries are beginning to be formed. Superintendents are beginning to make collections for their offices. Small collections are being made for individual schools, while individual teachers of the more enterprising class are beginning collections of books relating to their profession. As this movement gains strength, authors and publishers will be encouraged to produce and put such books on the market, and in time we may hope to have enterprising dealers wholly devoted to the purchase and sale of pedagogical books.

In the office of the board of education of the city of Milwaukee I found, in 1852, a valuable pedagogical library which had been collected by the efforts of the then superintendent, Mr. James MacAlister. This is the best collection of educational books that I remember to have seen in the possession of any school board. It is desirable that there should be a similar collection in the office of every superintendent of city schools and Barnard's Journal should constitute a part of it. For this purpose the board should set apart annually the necessary funds for the purchase of the books. Then there should be a modest but choice selection in every considerable public school, for the handy use of teachers. In Vienna, every school is allowed annually a considerable sum for the purchase of books, pedagogical and general.

In France, besides the great national pedagogical library and museum established in Paris in 1878, there are already scattered over the country more than a thousand local pedagogical libraries. In some of the departments at least one such library is found in nearly every canton. A commission has been appointed by the minister of public instruction to make a selection of foreign pedagogical literature for translation into the French with a view to publication.

An extensive and exceedingly valuable collection of educational literature, not only in English, but in other languages, has been gathered at the National Bureau of Education, as an indispensable part of its equipment. Here the student of pedagogy can find the needed facilities for research in all the branches of the science. Between this great central library and the local libraries above referred to there should be a full collection of standard educational works and official reports, forming a department of every State library or forming a separate establishment under the direction of the State educational authorities. And, besides these special libraries, every public library, whether large or small, should contain a copy of Barnard's American Journal of Education, with the current issues of educational books in the English tongue; and, in addition, the larger libraries ought to contain the current issues of educational works in other languages, especially in the German and French.

PROVISIONS FOR COERCIVE SCHOOL ATTENDANCE.

The two essential elements of a system of universal popular education are (1) public provision for the support of schools for the education of all youth and (2) the instruction of all children in such schools or by other means.

To secure universal education it is not enough to provide schools at public expense: care must be taken that all children are taught in these schools or elsewhere. It is a remarkable fact that both of these fundamental principles were adopted and embodied in legislative enactments by the first settlers on the shores of New England. The provision for universal compulsory education (act of 1642) antedates by five years the law requiring the establishment and support of public schools. The compulsory act provided for the exclusion of "barbarism" from every family by enjoining upon the municipal authorities the duty of seeing that *every child* within their respective jurisdictions should be educated, and bred up in some honest, lawful calling, by his parent or guardian. How long this compulsory provision continued to operate effectively it is not, perhaps, easy to determine.

In the modern revival of education the first efforts put forth by the friends of the cause were directed mainly to the improvement of the means of instruction, in supplying better school-houses, better teachers, better text books, and better methods of instruction and management. As progress was made in this direction it began to appear that many children could not or would not avail themselves of the benefits and privileges which had been so liberally provided for them at the public expense. Horace Mann, in one of his masterly reports of forty years ago, says:

> Among our most patriotic and philanthropic citizens, the inquiry is becoming more and more frequent, whether a right to rear up children in a state of ignorance, with all its consequent degradation and dangers, is one of the inalienable rights of a republican?

Thus the question of compulsory education was again posed, but practical compulsion has made but slow progress. We find that, at present, after four decades of discussion and effort, compulsion in any form, either direct or indirect, has been authoritatively recognized as desirable in only sixteen of the thirty-eight States, namely, California, Connecticut, Illinois, Kansas, Maine, Massachusetts, Michigan, Nevada, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, Wisconsin.

In general the statutory provisions in these States for direct compulsion consist in requiring persons having the care and control of children from eight to fourteen years of age to send them to school for a period varying from twelve to twenty weeks, under penalty for each neglect of a fine of from $10 to $20. In most cases the provision for direct compulsion is accompanied by another for indirect compulsion, forbidding the employment of children in any manufacturing, mechanical, or mercantile establishment who have not attended school during the preceding twelve months from twelve to twenty weeks. In Pennsylvania and Rhode Island there is provision for indirect compulsion only. The provision for indirect compulsion is, on the whole, the most stringent in the State of New Hampshire. The statute is as follows:

> No child under sixteen years of age may be employed in any manufacturing establishment unless he has attended school at least twelve weeks in the year preceding, and none under said age may be so employed (except in vacations of the school in the district in which he resides), unless he can write legibly and read fluently in readers of the grade usually classed as third readers. Nor may any child under fourteen be so employed unless he has attended school in the district in which he dwelt at least six months, or during the whole time school was kept in that year; penalty for employment except under the conditions prescribed, $20 for each offence.—(Amendments of 1881, sections 11 and 12, chapter 91, in the general laws of 1878.)

The compulsory laws in most of the States where they exist have as yet been of little practical benefit, owing to the fact that they lack adequate provision for their efficient enforcement. In Massachusetts, besides the compulsory provisions above mentioned, there is a law known as the truant law, enacted in 1850 and subsequently amended and perfected, compelling the attendance of truants and absentees growing up in ignorance and without lawful occupation, and also a statute, enacted in 1866, providing for the education and care of neglected children, by taking them from their parents and placing them in institutions especially provided for them. The original truant law contained a local option provision, and during a number of years it was adopted only by the city of Boston. Here its beneficial effect was so marked that later on it was made obligatory throughout the Commonwealth, the school board of every city and town being required to appoint truant officers to execute the provisions of the act. The results have been highly satisfactory. The truant officers are charged with the duty of executing not only the truant act, but also the other laws for the prevention of illiteracy and the securing to all children competent elementary education. Seventeen truant officers are now employed in Boston, or one truant officer to 21,343 inhabitants. The incorrigible truants and absentees are sent for one or two years to reformatories or to other institutions specially provided therefor, where, under proper restraint, they are properly instructed and cared for. This system has had a marked effect in improving the attendance throughout all the cities in the State and in clearing the streets of children growing up in ignorance and idleness.

A few years ago the city of New York, under the provision of the compulsory act of 1874, established a truant system which has produced good results although it has come far short of accomplishing all that could be desired, owing to radical defects in some features of the law. Beyond the cities named, there are few, if any, where even an attempt has been made to enforce the laws for compulsory attendance.

Public instruction cannot be considered as having fulfilled its mission until it secures the rudiments of education to every child. To accomplish this object coercion is necessary. No community has ever been known to secure absolutely universal education without the application of the principle of coercion. It is right to make the schools attractive and use all available moral means to secure the attendance of pupils, but these means have never proved wholly adequate: experience has proved the necessity of supplementing them by compulsion. When non-attendance is due to the dereliction of the parent, then the parent must be held responsible by the strong arm of the law; if the child absents himself contrary to the wish and intention of the parent, then the child must be held responsible. All arguments against compulsion have been triumphantly refuted by accomplished facts.

The principle of compulsion has been adopted by nearly every civilized country in the world. In Prussia it was incorporated into the school law as early as 1742; and in all the German states it has been effectually applied during nearly the whole of the present century. The example of Germany has been followed by Denmark, Norway, Sweden, Austria, Greece, Italy, Spain, Portugal, Switzerland, Great Britain, and France. In Belgium and Holland it has thus far been successfully opposed by sectarian influence.

In 1861 Matthew Arnold, in a report to both houses of Parliament on elementary education in several countries on the Continent, said that compulsion in education could never be adopted in either France or England. But his prediction has not proved true: we now see that in both countries compulsory education has become a reality. In the great educational act of Parliament passed in 1870, compulsion was left at the option of the local school boards throughout England and Wales. After some experiments in this direction by a few of the largest cities, compulsion was made obligatory on all school boards, not only in England and Wales, but in Scotland as well. Never was compulsory school attendance more rigidly enforced in any community than it is to-day in the slums of London and the squalid alleys of Manchester. The chairman of the London school board, in speaking of the results of compulsory measures adopted by that board, says: "The convictions for juvenile crime are now only half what they were in 1870." In France the law making elementary instruction compulsory was passed March 28, 1882; and this is no lame, half-way measure, but a law providing all the necessary machinery for its effective enforcement.

The common objections to compulsory attendance were answered by the superintendent of public instruction of Kansas, in his report for 1873, in the following apt and incisive manner:

> (1) "Such a law would create a new crime." I reply, it ought to. To bring up a child in ignorance is a crime, and should be treated as such. (2) "It interferes with the liberty of parents." I reply again, it ought to, when they are incapacitated, by vice or other causes, for the performance of essential duties as parents. (3) "It arrogates new power by the government." So do all the quarantine and hygienic regulations and laws for the abatement of nuisances in the time of pestilence. Now, ignorance is as noxious as the most offensive nuisance and more destructive than bodily contagions. Self protection is a fundamental law of society. (4) "It is un-American and unadapted to our free institutions." To put the question in the most offensive form, it may be asked, "Would you have a policeman drag your children to school?" I answer, "Yes, if it will prevent his dragging them to jail a few years hence."

REPORTS AND STATISTICS.

As a rule, the school authorities of every city publish an annual report on the school system under their charge. The three essential features of this document are the annual report of the president of the school board, or of a committee appointed for the purpose, the report of the superintendent, and the statistical tables. The reports of many cities, and especially of the larger ones, usually comprise a variety of materials besides, relating to the operations and condition of the school system, such as reports of standing and special committees, reports of superintendents of special branches of instruction, reports of principals of high schools, principals of normal schools, information relating to the organization of the system, with lists of school officers and teachers, rolls of honor, catalogues of graduates, rules and regulations, "manuals," courses of study, lists of text books, and so forth. In many cases the document thus issued, which is usually styled the annual report of the school board or school committee, is a good sized volume.

On the other hand, there are cities of considerable size where the annual school report consists of a single document—namely, the annual report of the superintendent—which the board adopts by a formal vote as its own;[1] and in some cases the rules and regulations provide that the report of the superintendent shall be printed and issued as the report of the board. The two great cities of Brooklyn and Chicago are examples of these extreme types of reports. The former contains no report from the board, or any of its committees, but only the report of its principal officers, namely, the superintendent of instruction, the superintendent of buildings, and the financial report of the secretary; while the latter contains the report of the board by its president, and reports of five standing committees in addition to that of the superintendent. The reports of New York and St. Louis represent an intermediate type. These documents contain no reports of standing committees. In these documents the reports of the superintendent are allowed a wider scope, and in both cases they are introduced by comprehensive general reports through their presidents and are supplemented by reports from one or two other officers.

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[1] Examples: Lawrence and Worcester, Mass.

The reports are generally printed in liberal numbers, and are not only freely distributed at home, but are sent gratuitously and postpaid to anyone outside of the municipalities for which they were intended who may make a request for them.

Occasionally a city[1] is found which fails, for a longer or shorter time, to print an annual report; but these exceptions only serve to prove the rule. In Massachusetts the report is required not only to be printed, but to be printed in a prescribed form and style. Following is the text of the statutory provision made in 1859:

> The school committee shall annually make a detailed report of the condition of the several public schools, which report shall contain such statements and suggestions in relation to the school as the committee deem necessary or proper to promote the interests thereof. The committee shall cause said report to be printed for the use of the inhabitants in octavo, pamphlet form, of the size of the annual reports of the board of education, and transmit two copies thereof to the secretary of said board on or before the last day of April, and deposit one copy in the office of the clerk of the city or town.

During the twenty years previous every school committee was required by law to make an annual report, which was to be read in open town meeting or printed, at the option of the committee. In speaking of this department of the system, Mr. Mann called it a "fruitful field of wisdom;" and Hon. George S. Boutwell, in his report for 1860 as secretary of the board of education, says:

> The largest public duty of a committee, when measured by its influence, is the preparation of the annual report. It is the chief means by which the people of the town can be reached, and it is now made a part of the documentary history of the State.

It is a curious and gratifying fact that the school reports of the cities in all the States are all printed, so far as known to the writer, in uniform octavo size.

Primarily the object of these annual city reports is to give the public, by whom the schools are supported and for whose benefit they are carried on, ample and correct information as to their organization, cost, working, and results; and, secondarily, to communicate to the teachers and employés the views and wishes of the administrative authorities respecting their aims and work. And there is a third purpose of no small importance served by these reports, namely, the purpose of interchange of educational information and pedagogical opinions and ideas among city school officials.

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[1] Examples: Cleveland, Ohio; Fort Wayne, Ind.; Davenport, Iowa.

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These reports, taken as a whole, are worthy of high praise. The best part of current American pedagogy is to be found neither in books nor in the educational periodicals, but in these city school reports. Some critics have complained of the deficiency of these publications in respect to originality; but originality is about the last thing that one ought to look for in a school report. The most original are generally of the least worth. The first requisite of a good report is a good statistical statement of the system. It is only by statistics that a useful comparison can be made of a system, either with itself at different periods of its development or with other systems. General statements of opinions as to condition and results go for little unless they come from persons of exceptional competency and reputation; but a statistical exhibit of the provisions for instruction, as compared with the school population and the results in attendance at the various stages of advancement, is an appreciable reality and a reliable basis of comparison if taken in connection with the programs and standards of examination. It is highly desirable that there should be uniformity in statistical exhibits. This has already been greatly promoted through the influence of the Bureau of Education; but it must be owned that a great number of reports still leave much to be desired, both in respect to uniformity and completeness of statistics. By uniformity here I mean conformity to the statistical schedules of the Bureau of Education. A large number of superintendents have adopted the good plan of beginning their reports with a comprehensive summary of logically arranged statistics of the system. It is extremely desirable that the number of scholars in private schools, with the amount of tuition they pay, should be reported. In some States school committees are required to obtain this information. Among the difficult statistical problems remaining to be solved are these two:

(1) To secure uniformity of school censuses or uniformity in reporting the number of children of school age. This item should be considered the starting point of all school statistics. There is considerable divergence of opinion as to what should be taken as the school age. My own opinion is that the school age for the purposes of comparison ought to correspond in its limits to the age assigned to elementary instruction by the preponderance of authority, namely, from six to fourteen years of age. This question ought to be discussed by educators until a general agreement upon it is reached; and then this conclusion should be embodied in legislation as soon as practicable in all the States.

(2) To establish a basis upon which to compute average membership, that is, the average number belonging to the school. As there is a

great diversity of practice in computing this item, comparisons based on it are of little value; and of no greater value are comparisons of percentages of attendance, since they are obtained by comparing the average daily attendance with the average number belonging. Therefore, when we see 98 or 99 per cent. of attendance reported, we know that this must be either, on the one hand, simply the result of a particular manner of keeping the records, or, on the other, of a pressure equally powerful and harmful brought to bear upon the pupils.

The fundamental statistical items to be considered and set forth as clearly and forcibly as possible are these:

(1) The schoolable population.

(2) The number of children of different ages attending public schools, that is, the whole number enrolled, the average membership, and the average daily attendance.

(3) The number of children of school age receiving instruction in schools other than the public schools and at home.

(4) The number of schools, school rooms, and teachers of the different categories.

(5) The total expenditures for public instruction, under three heads, namely, (*a*) that for permanent improvements, (*b*) for tuition, (*c*) for incidentals, with the cost per capita for each and all these three classes of expenditure, based on daily attendance, average membership, and total enrolment, duplicate enrolments not included. In addition to these fundamental items, the more special statements the better. In particular it is desirable that the cost for text books, stationery, and apparatus be clearly stated in every report; the number of pupils who have fairly completed the elementary course, the number entering upon the high school course, the number completing the high school course, normal, &c.; also, the number of pupils in each grade, that is, primary, grammar, and high, and also the number in each class or year of the course, with the average age of the pupils in each year of the course.

These two classes of items will show, not only how the provision for education corresponds with the needs, but also the results obtained; and these are the items most needed in making a useful comparison of city systems. For home comparison, statistics in detail of individual schools, showing attendance, ages of pupils, classification, promotions, graduations, number of pupils to a teacher, &c., are desirable.

In looking over reports we find here and there special excellences in the department of statistics. Why may not all the really useful items be brought together and made general in these reports? When I consider what progress has been made in this matter during the last twenty-five years, I am not without hope that this result will be reached at no distant future.

The St. Louis report took the lead in furnishing an item of importance respecting attendance even yet found in few others, namely, the number of scholars attending the full year (200 days), 180 to 200 days, 160 to 180 days, 140 to 160 days, 120 to 140 days, 100 to 120 days.

The feature of the statistics of the report of Brooklyn for 1883, both noteworthy and praiseworthy, is the full statement of the ages of pupils. These tables do not give the average age, but the actual number of each age: (1) irrespective of grades; (2) in the three different grades, high, grammar, and primary; (3) in each class and school of these three grades. Such tables are extremely valuable as a means of determining the character and efficiency of the school system.[1]

The New York report contains a unique element of statistics, referred to on page 140 under the head of "Examinations of schools," viz, tables showing the results of the personal examinations in all the branches of study by the assistant superintendent. For instance, these tables show the number of classes (sections taught by individual teachers) found to be excellent, good, fair, indifferent, and bad in each branch of instruction. The details respecting individual schools and teachers are not printed, but wisely reserved for the private use of members of the board.

A very common deficiency in the statistics of reports, and one very annoying to the investigator, is a lack of the separation of the sexes in the statements respecting pupils.

Occasionally we find a superintendent's report giving an extremely meagre account of the schools, either in the form of statistics or any other form, the author seeming to regard school statistics with disdain and to imagine it his duty to fill the pages of his report with brilliant discussions of general educational topics. It is quite unnecessary to print large editions of reports of this class.

Aside from the statistics, the most useful and interesting reports are those which keep closest to the business in hand. They are full of information about the system; they indicate the good tendencies and the good results; they point out the defects and weaknesses with distinctness, but without exaggeration; they are judicious and far-sighted in suggesting improvements and remedies for evils; they always keep uppermost and foremost what is best in opinion and practice touching the matters under consideration.

Not a few reports are not only embellished but greatly enriched by views, plans, and descriptions of new and improved school buildings. The Denver report for 1883 contains a very remarkable chapter on school architecture, comprising a history and description of each building, accompanied by views and plans, together with the original cost, and showing the cost of improvements and repairs made on each since its completion; also a statement, in tabular form, of the floor and glass surface and cubical contents (air space) of each house, as provided for each pupil.[2] In point of completeness this document leaves nothing to be desired. It is often the case that descriptions of school-houses contained in reports are of little value for want of completeness in the details of information.

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[1] It is to be regretted, however, that the statistics of this report, so excellent in general, do not present more distinctly the sex of teachers and pupils.

[2] Report of superintending architect, Robert S. Roeschlaub.

The annual report issued by the Cincinnati board consists of two parts; part first is the report proper; part second is a handbook for the school year. The issue for the year ending August, 1882, comprises four hundred and twenty-five pages, and may well be regarded as a model for imitation. In clear and logical arrangement, it is unsurpassed; in completeness of information, it is worthy of all praise; in point of typography and paper, it hits the golden mean, avoiding fanciful extravagance on the one hand and meanness on the other; and I must make it a point to note as one of its merits that it contains, not only a table of contents, but a very complete index. The latter is almost universally lacking in many reports otherwise good; and, strange as it may seem, nevertheless it is true that a great proportion of the reports are destitute of even a table of contents. This is certainly nothing less than inexcusable slovenliness. To give a precise idea of the range of matters comprised in the Cincinnati document, the table of contents of the report for 1883 is here inserted:

CONTENTS.

PART FIRST.

Report of the president.
Report of the clerk.
Report of the committee on funds and claims.
Report of the treasurer of the public library.
Report of the librarian of the public library.
Report of the superintendent of schools.
Superintendent's tables.
Report of the committee on building and repairs.
Contract establishing union board of high schools.
Sections of the Ohio school laws applicable to Cincinnati.

PART SECOND.

Officers of the board of education.
Members of the board of education.
Standing committees of the board of education.
Local trustees.
Delegates to union board of high schools.
Standing committees of union board.
Members of board of managers of public library.
Standing committees of managers of public library.
Rules of the board.
Regulations of the schools.
Regulations of the union board of high schools.
Regulations of the board of examiners.
Course of study in district schools.
Course of study in intermediate schools.
Course of study in German department.
Course of study in Gaines High School.
Text books in high schools.
Questions submitted at annual examinations for high schools.
Questions submitted at annual examinations for intermediate and district schools.
Course of study in deaf-mute schools.
Course of study in high schools.
Time table of English schools.
Time table of German-English schools.
Time table of teachers of music.
Time table of teachers of penmanship.
Time table of teachers of drawing.
Boundaries of districts, location of school-houses, names and residences of teachers.
Per diem of officers, &c.
General index.

The St. Louis report must, on the whole, be regarded as belonging to the same class, although it has no index. This deficiency is in part supplied by a very full table of contents, as the following extract,[1] relating only to the president's report, shows:

Report of the president:
- Bonded debt or sinking fund.
- Permanent fund.
- School capital fund.
- General revenue fund.
- Building fund.
- Financial management.
- Examination of books and accounts.
- Janitors' salaries.
- Teachers' salaries.

Report of the president:
- Officers' salaries.
- New legislation.
- Sixteenth section.
- Ames bequest.
- Term of office of officials.
- German-English plan.
- Kindergartens.
- Public school library.

It is important that these city reports should be largely circulated among the inhabitants. On this point I speak from observation, having witnessed the beneficial results of this practice. To circulate generally among the inhabitants documents so voluminous as the modern reports above referred to, the expense would, perhaps, be thought too considerable. The objects in view, however, might be substantially accomplished without excessive expenditure by circulating for the reading of the general public those parts of the document especially adapted to the purpose, such as the reports of the president and the superintendent.

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[1] Report of 1881, Mr. Frederick N. Judson, president.

APPENDIXES.

APPENDIX A. See page 37.

POLYTECHNIC ASSOCIATION (FRANCE).

[Founded in 1830 by the alumni of the Polytechnic School, its public utility being recognized by decree of June 30, 1869.]

1878—1879.

Medal of merit at the Universal Exposition at Vienna, 1873; Silver medal, Brussels Exposition, 1877; Gold medal at the Universal Exposition at Paris, 1878.

GRATUITOUS AND PUBLIC COURSES OF INSTRUCTION.

[Taught gratuitously, for workingmen.]

SECTION OF THE HÔTEL-DE-VILLE.

[Municipal Administration Building, fourth arrondissement (rue de Rivoli and Place Baudoyer), entrance in the court, staircase B, large hall, third story.]

M. JEAN WAGNER, *delegate of the section.*

Opening of the courses on Monday, November 11, 1878.

French. (*First and second years.*) Sunday at 3 p. m. M. J.-R. SAINT MARTIN, *professor.* Grammar and literature.

Applied mathematics. Wednesday at 8 p. m. M. L. HENRY, *professor.*

Plane geometry. Wednesday from 9 to 9.45 p. m. M. L. HENRY, *professor.*

Geometry of space. Wednesday from 9.45 to 10.30 p. m. M. L. HENRY, *professor.*

Algebra and descriptive geometry. Monday at 9 p. m. M. G. LEDRU DE BIANZAT, *professor.*

Organic chemistry. Saturday at 8 p. m. M. ÉM. GAUDIN, *professor.*

Natural history. Thursday at 9 p. m. Dr. DELAUNAY, *professor.*

Hygiene. Thursday at 9 p. m. Dr. PICQUÉ, *professor.* The course will be announced later.

Geography. M. LACASSE, *professor.*

Elements of public law. Tuesday at 8 p. m. M. ALBERT MEURGÉ, *professor.*

Law in common life. Tuesday at 8 p. m. M. CH. LECOUFLET, *professor.*

Commercial legislation. Tuesday at 9 p. m. MM. LAHAYE and FLEURY, *professors.*

Tachymetry. Friday at 8 p. m. M. BEHNE, *professor.*

Rapid algebra. Friday at 8 p. m. By the author, M. LAGOUT, *professor.*

Popular astronomy. Monday at 9 p. m. M. FOUQUET, *professor.*

Accounts (commercial, industrial, and financial; book-keeping in the first and second years). Saturday at 9 p. m. M. CARON, *professor.*

Penal law. Friday at 8 p. m. M. JULIEN BRÉGAULT, *professor.*

History of great inventions. (This course will begin about the middle of January.) Friday at 8 p. m. Dr. LEMAIRE, *professor.*

Stenography. First, elementary course. M. BELMONT, *professor.* Second, higher course, M. FONTAINE, *professor.*

Lithography and lithographic drawing. M. BRAULT, *professor.*

The railroad: its history and working. Friday at 7 p. m. M. L. BACLÉ, *professor.*

English. (*First and second years.*) Sunday at 2 p. m. M. C.-W.-R. NEDDEN, *professor.*

German. (*First year.*) Thursday at 8 p. m. M. WAGNER, *professor.*

German. (*Second year and higher course.*) Sunday at 1 p. m. M. WAGNER, *professor.*

Monday.	Tuesday.	Wednesday.	Thursday.
At 8 p. m.—Popular astronomy; penal law. At 9 p. m.—Algebra and descriptive geometry.	At 8 p. m.—Elements of public law; law in common life. At 9 p. m.—Commercial legislation.	At 8 p. m.—Applied mathematics. At 9 p. m.—Plane geometry. From 9.45 p. m. to 10.30 p. m.—Geometry of space.	At 8 p. m.—German (first year). At 9 p. m.—Natural history and hygiene.

Friday.	Saturday.	Sunday.
At 8 p. m.—Tachymetry and rapid algebra. At 9 p. m.—History of great inventions; railroads.	At 8 p. m.—Organic chemistry. At 9 p. m.—Accounts.	At 1 p. m.—English (first year). At 2 p. m.—German (second year) and higher course. At 3 p. m.—French (first and second years.)

The distribution of honorable mentions and medals for the year 1877-'78 will take place on the day of the opening of the course.

The formal opening will take place at the Public Hall of the Administration Building November 11. There will be a report and distribution of medals and rewards. Address by M. H. DE LA POMMERAYE.

The courses of the Polytechnic Association are designed for adults; except by special permission of the professors, pupils under 16 *years of age will not be admitted.*

Ladies are admitted to all the courses.

President of the association:

DUMAS,

Perpetual Secretary of the Academy of Sciences, Member of the French Academy.

Mayor of the fourth arrondissement:

DELPIRE.

For further particulars: Secretary General, J. Gastelier.[1]

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[1] An exact copy of the program, of which the above is a translation, is printed on large sheets and conspicuously posted in various parts of the district.

APPENDIX B. See page 46.

I. ST. LOUIS NORMAL SCHOOL.

COURSE OF STUDY.

JUNIOR YEAR.

First term. Time: Twenty weeks.	Second term. Time: Twenty weeks.
The art of education.	*The art of education.*
Methods of teaching and review of Arithmetic, Geography, Grammar and Composition, Reading and Phonetics. Physical education. Teaching exercises. Language Latin or German. Drawing. Penmanship. Singing. Mental arithmetic. Calisthenics. Spelling.	Methods of teaching and review of Arithmetic, Geography, Grammar and Composition, Reading. Early education. Teaching exercises. Language Latin or German. Mental and moral philosophy. Methods of teaching — Drawing. Penmanship. Singing. Mental arithmetic. Calisthenics. Spelling. Visits to school for observation.

SENIOR YEAR.

First term. Time: Twenty weeks.	Second term. Time: Twenty weeks.
The science of education.	*The science of education.*
Methods of object lesson teaching. Physiology and hygiene. Reading. Course of reading. Moral education. Composition. Teaching exercises. Language Latin or German. Principles of instruction: Methods of teaching — Drawing. Penmanship. Singing. Mental arithmetic. Calisthenics. Spelling. Five weeks as extra teachers, or as substitutes, if necessary.	Philosophy of education. Methods of teaching. Discipline and school management. Rules of the school board. History of education (lectures and recitations). Composition. Teaching exercises. Language Latin or German. Principles of instruction: Methods of teaching — Drawing. Penmanship. Singing. Mental arithmetic. Calisthenics. Spelling. Substituting in place of absent teachers.

All recitations are conducted with special reference to the modes of teaching the branch of study under consideration. Teaching exercises in all studies are required in the fourth and junior classes to be given to the class. The teaching exercises indicated in the middle and senior classes are before the whole school.

II. BOSTON NORMAL SCHOOL.

COURSE OF STUDY.

1. Mental and moral science and logic.
2. Principles of education, school economy, and methods of instruction.
3. Physiology and hygiene.
4. Natural science.
5. Study of language.
6. Elementary studies.
7. Vocal music, drawing, and blackboard illustration.
8. Observation and practice in the training school.
9. Observation and practice in the other public schools.

PROGRAM OF THE OBSERVATION AND PRACTICE IN THE TRAINING AND OTHER BOSTON PUBLIC SCHOOLS.

The practical work in connection with the school room that is done by the pupils of the Boston Normal School may be arranged under the following heads:

I. OBSERVING AND REPORTING.

The normal pupils, accompanied by one of their teachers, visit a class in the training school daily for about a week, witness the regular work of the room twenty or thirty minutes, return and report orally to the teacher accompanying them. This report is merely an orderly statement of what is done and said in the room, the teacher making the statement complete and calling attention to such excellences as she deems best. These visits are made at the same hour on successive days, so that the same lesson is seen each day during the week.

II. TEACHING FOR CRITICISM.

The normal pupils teach classes from the training school, following the regular program of the room from which the children come. A class of about twelve children is taught twenty or thirty minutes daily for about a week, under the direction of one of the normal teachers, the same subject being taught to the same pupils at the same hour. After the teaching, the rest of the hour is devoted to criticisms of the lesson by the normal pupils and their teacher. Special preparation for these lessons is made at another hour.

III. OBSERVING WORK IN THE SCHOOLS.

The normal pupils visit the public schools of the city for one day, one pupil only going to a room. Each pupil reports in writing the forenoon program of the school in which she observes and one lesson of the work of the afternoon. The report of the lesson shows (1) the object of the lesson and (2) the steps by which this object was attained. The facts for the reports are to be gathered from observation.

IV. TEACHING IN THE TRAINING SCHOOL.

The normal pupils, in sections, accompanied by their teachers, visit the training school. One pupil of each section teaches fifteen or twenty minutes, while the others observe. They then return to the normal school, and the rest of the hour is spent in criticising the lesson and in making suggestions in regard to future lessons. This work usually continues about one week, sometimes two.

V. OBSERVING AND TEACHING IN THE PRIMARY SCHOOLS.

The normal pupils spend two weeks in the primary schools of the city. Only one pupil is assigned to a room, and this room is selected by the principal of the district. The normal pupils are under the immediate direction of the regular teachers, and are expected to divide their time about equally between teaching and observing the work of the regular teachers; but during the second week they are usually left alone with the class for a day or two. The normal teachers spend their time in visiting their pupils for the purpose of observation and criticism.

VI. OBSERVING AND TEACHING IN THE GRAMMAR SCHOOLS.

The normal pupils spend two weeks in the grammar schools of the city, and are assigned, occupied, and visited the same as in the primary schools.

APPENDIX C. See page 66.

QUESTIONS FOR EXAMINATION OF THE FIRST CLASS IN THE BOSTON GRAMMAR SCHOOLS, 1845.

WORCESTER'S HISTORY.

1. What is history ?
2. What are some of the uses of history ?
3. Enumerate some of the sources of history ?
4. What nations are among the first mentioned in history ?
5. For what were the Egyptians distinguished ?
6. For what were the Phœnicians distinguished ?
7. Who was the founder of Babylon ?
8. Who was the founder of the Persian empire ?
9. Who were some of the most distinguished orators and poets of Greece ?
10. Who was the founder of Rome ?
11. What was the character of the early government of Rome ?
12. Can you mention the names of the Roman emperors ?
13. Can you give an account of the feudal system ?
14. What were the purposes of the Crusades ?
15. In what century was the great French Revolution, and who were some of the characters who figured in it ?
16. What nation ruled Britain at the commencement of the Christian era ?
17. Who were the Saxons, and how came they to invade Britain ?
18. What do you understand by the Norman conquest ?
19. What was the period of the Commonwealth in England, and who was the most distinguished character in it ?
20. About what period did the first colonists come to New England, and what were the supposed motives for their leaving the mother country ?
21. How long did they continue subject to the mother country, and what were some of the assigned reasons for throwing off her government ?
22. When did the war of the American Revolution commence, and who were the allies of the Americans ?
23. When was the present Federal Constitution formed, during or after the war of the revolution, and how many States accepted it at its formation ?
24. About what period was the embargo laid by President Jefferson, and non-intercourse substituted for it ?
25. About what period did the last war between Great Britain and the United States commence, and what were the causes assigned by the Americans for its declaration ?
26. What do you understand by an embargo ?

27. How many more members are there now in the Senate of the United States than there were at its first adoption?

28. What was the result of the invasion of Canada by the Americans in the last war?

29. What is chronology?

30. What are the eras most used in chronology?

GEOGRAPHY.

1. Name the principal lakes in North America.

2. Name the principal rivers in North America.

3. Name the rivers running eastward into the Mississippi.

4. Name the rivers running westward into the Mississippi.

5. Name the States which lie upon each bank of the Mississippi, and their capitals.

6. Do the waters of Lake Erie run into Lake Ontario, or the waters of Ontario into Erie?

7. Which is the most elevated above the level of the sea, Lake Superior or Lake Huron?

8. Write down the boundaries of Lake Erie.

9. Quebec is (according to your maps) 4° 40′ north of Boston; Ithaca, in New York, is 5° 30′ west from Boston. Which place is farthest from Boston?

10. What is the general course of the rivers in North and South Carolina?

11. What is the general course of the rivers in Kentucky and Tennessee?

12. What is the cause of the rivers in these four contiguous States running in opposite directions?

13. Which is most accessible, in its interior parts, to ships and to commerce, Europe or Africa?

14. Name the empires of Europe.

15. Name the kingdoms of Europe.

16. Name the republics of Europe.

17. What is the nearest route from England to India, by the Cape of Good Hope or by the Red Sea?

18. What do you understand by the line of perpetual snow?

19. On which range of mountains is the line of perpetual snow most elevated above the ocean, on the Rocky Mountains of North America or on the Cordilleras of Mexico?

20. The city of Mexico is in 20° of north latitude; the city of New Orleans is in 30° of north latitude; which has the warmest climate?

21. Name the rivers, gulfs, oceans, seas, and straits through which a vessel must pass in going from Pittsburgh, in Pennsylvania, to Vienna, in Austria.

22. On which bank of the Ohio is Cincinnati, on the right or left?

23. What are the principal natural and artificial productions of New England?

24. Over what continents and islands does the line of the equator pass?

25. What parts of the globe have the longest days?

26. If a merchant in Moscow dines at 3 o'clock p. m. and a merchant in Boston at 2 o'clock, which dines first?

27. Name the countries which lie around the Mediterranean Sea.

28. What countries lie around the Black Sea?

29. What rivers flow into the Black Sea?

30. Name the principal ports of Russia on the Black Sea, on the White Sea, and on the Gulf of Finland.

31. Draw an outline map of Italy.

WORDS TO BE DEFINED.

(1) Monotony, (2) convocation, (3) bifurcation, (4) panegyric, (5) vicegerent, (6) esplanade, (7) preternatural, (8) forum, (9) evanescence, (10) importunate, (11) in-

fatuated, (12) kirk, (13) connoisseur, (14) dormant, (15) aerial, (16) sphinx, (17) rosemary, (18) thanatopsia, (19) monody, (20) anthology, (21) pother, (22) misnomer, (23) zoönomia, (24) maniacal, (25) hallucination, (26) Machiavelli, (27) madrigals, (28) hades.

GRAMMAR.

1. Parse the following sentence, and write a full account of each word: Withhold not good from them to whom it is due.

2. Parse the following: The wages of sin is death.

3. Write a short sentence, containing an active transitive verb and an objective case.

4. A sentence containing a neuter verb, a relative pronoun, and an adjective in the comparative degree.

5. A sentence with the verb *to comfort*, in the passive voice, potential mode, perfect tense, second person plural.

6. In what cases do we use *a* instead of *an*?

7. What is the difference between an active and a neuter verb?

8. The difference between ordinal and numeral adjectives?

9. What is an allegory?

10. Punctuate the following sentences, correct all the errors you may find in them, and write out grammatically, if you think them to be ungrammatical:

Your brother was there and he said to my sister and i i am tired and must go and lay down to rest me and when he was laying down we tried to lie a vail over his face.

I shall come to see you this afternoon unless it rains.

Vain man thou presumest too much neither the lion nor the tiger will bow their necks to thee.

To be or not to be that is the question.

The propriety of such rules are doubtful.

NATURAL PHILOSOPHY.

1. What is the difference between natural history and natural philosophy?

2. What is the difference between zoölogy and geology?

3. Define the attraction of gravitation, attraction of cohesion, and chemical attraction or affinity.

4. What do you understand by the centre of gravity in a body?

5. Define momentum.

6. What is the reason that when a coach in motion is suddenly stopped the passengers are thrown forward?

7. What is the rate of velocity of falling bodies?

8. How much farther will a body fall in ten seconds than in five?

9. What is the reason that you can cut a piece of pasteboard or hard substance more easily by holding it close up to the rivet of a pair of scissors than by holding it near the ends of the blades?

10. Why is it that when you skip a stone over the surface of water it does not sink the first time it strikes the water, since it is heavier than the water?

11. Which could you stop most easily, a railroad car weighing a ton going at the rate of 10 miles an hour, or a car weighing 100 tons creeping along at the rate of ½ of a mile an hour?

12. Explain the hydrostatic press.

13. What is specific gravity?

14. How high can you raise water in a common pump with a single box?

15. How high can you raise quicksilver by the same contrivance?

16. In building a cistern should it be made stronger at the top or at the bottom? Why?

17. If a grindstone should be suddenly split in pieces while whirling rapidly around would the fragments fall directly to the ground or not? Explain the principle.

18. Is a stage coach with baggage upon the top more liable to be overset than the same coach with the baggage hung under the axletree? If so, why?

19. In a small boat which is in danger of being overset should the passengers stand up or lie down in the bottom? Why?

20. Which occupies the most space, a pound of water when liquid or when in the state of ice?

ASTRONOMY.

1. What is the radius of a circle?
2. What is the arc of a circle?
3. How many degrees are there in the quarter of a circle?
4. Which circle contains the greater number of degrees, the Equator or Arctic circle?
5. What do you understand by the terms zenith and nadir?
6. What is the horizon?
7. What is the axis of the horizon?
8. What is a vertical circle?
9. What is the altitude of a heavenly body?
10. What is the azimuth of a heavenly body?
11. Has the earth the greatest velocity in the rotation upon its axis or the revolution around the sun?
12. In the diurnal revolution of the earth, who are now moving with the greatest velocity, the inhabitants of Mexico or of Boston?
13. What difference will there be in the velocity with which the inhabitants of the above named cities are moved in the annual revolution of the earth around the sun?
14. Suppose one man is on the top of a mountain, another at its foot, and a third in a deep cavern, all on the same parallel of latitude, which will pass through the greatest space in one revolution of the earth upon its axis?
15. Which moves with the least velocity?
16. At what angle is the axis of the earth inclined to the plane of its orbit?
17. Suppose the angle of the earth were perpendicular to the plane of its orbit, what effect would it have upon the order of the seasons?
18. Explain the causes of the change of seasons.
19. How many times does the moon revolve around the earth in one year?
20. How often does the moon revolve upon her axis?
21. Why is it that we see only one side of the moon?
22. What causes an eclipse of the moon?
23. What causes an eclipse of the sun?
24. How many primary planets are there in our solar system?
25. How many secondary planets?
26. How many satellites has Jupiter?
27. How many satellites has the earth?
28. Which way does the earth move around the sun, from east to west or from west to east?
29. What is the principal cause of the tides?
30. What do you understand by neap tides?
31. What do you understand by the transit of a planet?

ARITHMETIC.

1. How much is $\frac{1}{3}$ of $\frac{1}{3}$ of 9 hours and 18 minutes?
2. What part of 100 acres is 63 acres, 2 roods, and 7 rods?
3. What is the quotient of one ten-thousandth divided by ten thousand? Express the answer in decimal and vulgar fractions.

4. A stationer sold quills at 10*s.* 6*d.* per thousand, by which he cleared $\frac{1}{8}$ of the price, but the quills growing scarce he raised the price to 12*s.* per thousand. What per cent. would he clear by the latter price?

5. Suppose A owes me $100 due at the end of 3 months and $100 due at the end of 9 months, and he agrees to give me a note for $200 payable at such a time that its present worth shall be the same as the sum of the present value of the two first mentioned notes. How long after date must this note be made payable?

6. A man has a square piece of ground which contains one-quarter of an acre and a quarter, on which are trees which will make wood enough to form a pile around on the inside of the bounds of the land 3 feet high and 4 feet wide. How many cords of wood are there?

7. A sold goods for $1,500, to be paid for one-half in 6 months and one-half in 9 months. What is the present worth of the goods, interest being at 7 per cent.?

8. A merchant in New York, where interest is 7 per cent., gives his note, dated at Boston, where the interest is 6 per cent., for $5,000, payable at the Merchants' Bank, Boston, on demand. Thirty days after the date of the note, demand is made. A year after demand, $200 are paid on the note. What sum remains due at the end of 2 years from the date of the note?

9. What is the square root of $\frac{8}{9}$ of $\frac{4}{8}$ of $\frac{4}{7}$ of $\frac{7}{9}$?

10. The city of Boston has 120,000 inhabitants, half males, and its property liable to taxation is $100,000,000. It levies a poll tax of $\frac{2}{3}$ of a dollar each on one-half of its male population. It taxes income to the amount of $50,000, and its whole tax is $770,000. What should a man pay whose taxable property amounts to $100,000?

APPENDIX D. See page 77.

MOLINE (ILL.) PUBLIC SCHOOLS.

PLAN OF SECOND ANNUAL INDUSTRIAL EXHIBIT AND RULES GOVERNING THE SAME, TO BE HELD AT SKATING RINK, MARCH 28, 1885.

LIST OF PREMIUMS.

CLASS A.—*Models of machines, implements, and other mechanical contrivances.*

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	$3 00	First prize	$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

CLASS B.—*Articles other than models the value of which shall depend upon their utility.*

(1) Articles of furniture:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	$3 00	First prize	$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

(2) Articles of clothing:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	$3 00	First prize	$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

(3) Miscellaneous useful articles:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	$3 00	First prize	$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

CLASS C.—*Articles of food.*

(1) Bread:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	$3 00	First prize	$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

(2) Cakes:

I. Pupils over 12 years:		II. Pupils under 12 years:	
Best cake	$2 00	Best cake	$1 00

(3) Pastry.

I. Pupils over 12 years:		II. Pupils under 12 years:	
Best specimen pastry	$2 00	Best specimen pastry	$1 00

CLASS D.—*Ornamental articles, whose chief value shall depend upon the artistic skill displayed in their production.*

(1) Lace and artistic needlework.

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	$3 00	First prize	$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

(2) Scroll sawing and wood carving:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	$3 00	First prize	$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

(3) Miscellaneous ornamental articles:

I. Pupils over 12 years:		II. Pupils under 12 years:	
First prize	$3 00	First prize	$2 00
Second prize	2 00	Second prize	1 50
Third prize	1 00	Third prize	1 00

CLASS E.—*Drawing.*

(1) Freehand copy without measurements, of an outline drawing placed before the pupils:

I. Pupils of 3d, 4th, and 5th grades:		II. Pupils of 6th, 7th, and 8th grades:	
First prize	$2 00	First prize	$2 00
Second prize	1 50	Second prize	1 50
Third prize	1 00	Third prize	1 00

III. Pupils of high school:	
First prize	$2 00
Second prize	1 50
Third prize	1 00

(2) Original design in black and white for wall paper, carpet, oil cloth, centre piece, border, &c., the conventionalized unit or units to be furnished pupils:

I. Pupils of 3d, 4th, and 5th grades:		II. Pupils of 6th, 7th, and 8th grades:	
First prize	$2 00	First prize	$2 00
Second prize	1 50	Second prize	1 50
Third prize	1 00	Third prize	1 00

III. Pupils of high school:

First prize	$2 00
Second prize	1 50
Third prize	1 00

(3) Drawing an object placed before the pupils:

I. Pupils of 6th, 7th, and 8th grades:

First prize	$2 00
Second prize	1 50
Third prize	1 00

II. Pupils of high school:

First prize	$2 00
Second prize	1 50
Third prize	1 00

(4) Working drawings:

I. Pupils of 6th, 7th, and 8th grades:

First prize	$2 00
Second prize	1 50
Third prize	1 00

II. Pupils of high school:

First prize	$2 00
Second prize	1 50
Third prize	1 00

CLASS F.—*Practical carpentry.*

Best specimen of mitring	$2 00
Best specimen of dovetailing	2 00
Best specimen of mortise and tenon	2 00

CLASS G.—*Plain hand sewing.*

I. Pupils over 12 years;

First prize	$2 50
Second prize	1 50

II. Pupils under 12 years:

First prize	$2 00
Second prize	1 00

CLASS H.—*Toys.*

I. Pupils over 12 years:

First prize	$2 50
Second prize	1 50

II. Pupils under 12 years:

First prize	$2 00
Second prize	1 00

CLASS I.—*Paintings and crayon work.*

1. Paintings or crayon drawings:

First prize	$2 50
Second prize	1 50

2. Decoration in oil or water colors of plaques, panels, fabrics, &c.:

First prize	$2 50
Second prize	1 50

CLASS K.—*Pupils of first and second primaries.*

Best useful article	$1 50
Best ornamental article	1 50

RULES GOVERNING THE COMPETITION.

(1) All pupils competing for the above prizes must be members of the school at the time of competition.

(2) No pupil shall make more than one entry in any class or subclass, excepting Class F. Pupils shall be eligible to only one prize in this class.

(3) All articles must be completed and entered on or before Monday, March 23.

(4) All articles entered for competition must be commenced and completed between date of this notice and date of entry.

(5) Each article when entered must bear a label showing the pupil's name, age, and room in school; also the class and subclass in which the entry is made.

(6) No article will be accepted whose construction does not represent the pupil's own unaided effort. (This rule shall not be construed to prevent pupils from obtaining all necessary advice and information before the actual commencement of the work.)

(7) Each pupil who hands in an article for the exhibit will be required to sign the following certificate:

I hereby certify that this ——— has been made by me since the announcement of the exhibit, December 19, and that no assistance has been given me since its commencement.

(8) The drawings of Class E must be made in school during the drawing hour.

(9) As early as the third week of the winter term pupils shall inform their teachers for what prize or prizes they intend to compete.

(10) Teachers shall make every effort to insure a proper understanding of and compliance with these rules on the part of pupils.

(11) Teachers shall take every precaution to prevent interference of this work with the pupil's regular school duties.

SPECIAL PRIZES.

Special prizes will be given by different citizens and firms of the city for some of the best products in the classes enumerated.

These prizes, with the names of those offering them, will be printed on a separate circular, which will be given to pupils at the beginning of the winter term.

APPENDIX E. See page 179.

DECORATION OF THE ASSEMBLY HALL, GIRLS' HIGH SCHOOL, BOSTON.

LIST OF CASTS, WITH COST OF EACH.

Subject.	Original cost in gold.	Expense of importation.	Total cost.
Frieze of Parthenon, British Museum	$336 62	$449 81	$786 43
Caryatid, southern portico of Erechtheum	30 00	39 34	69 34
Diana of Gabii, Louvre	24 00	41 50	65 50
Venus of Milo, Louvre	....	....	....
Polyhymnia, Louvre	24 00	41 50	65 50
Pudicitia, Vatican	37 60	104 12	141 72
Amazon, Capitoline Museum	40 00	53 20	93 20
Genius of the Vatican	5 60	18 29	23 89
Psyche, Naples Museum	1 60	2 50	4 10
Demosthenes, Vatican	32 20	88 22	120 42
Bone player, Berlin Museum	8 00	15 85	23 85
Apollo (archaic), British Museum. *Bust*	2 50	3 30	5 80
Apollo (Pourtales), British Museum. *Bust*	5 00	6 23	11 23
Zeus Trophonius, Louvre. *Bust*	96	1 60	2 56
Jupiter Otricoli, Vatican. *Bust*	5 00	15 21	20 21
Juno, Villa Ludovisi, Rome. *Bust*	8 00	27 08	35 08
Pallas, Louvre. *Bust*	4 00	7 85	11 85
Bacchus (Young), Capitoline. *Bust*	....	....	....
Æsculapius, British Museum. *Bust*	5 00	6 23	11 23
Homer, Capitoline. *Bust*	2 40	10 41	12 81
Pericles, Vatican. *Bust*	2 40	9 66	12 06
Augustus (Young), Vatican. *Bust*	1 60	7 30	8 90

"Expense of importation" includes premium on original cost, packing, shipping, freight, insurance, wharfage, delivery, unpacking, and repairs.

The casts were purchased as follows:

Nos. 1, 2, 12, 13, 19, from D. Brucciani, 40 Russell street, Covent Garden, London.

Nos. 3, 5, 7, 9, 11, 14, 17, 22, from Bureau du Moulage, Palais du Louvre, Paris.

Nos. 6, 8, 10, 15, 16, 20, 21, from L. Malpieri & G. Condiotti, Rome. (To be addressed through United States consul or banker.)

Nos. 4 and 18, from Paul A. Garey, 6 Province House Court, Boston.

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CIRCULARS OF INFORMATION

OF THE

BUREAU OF EDUCATION.

No. 2—1885.

TEACHERS' INSTITUTES.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1885.

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LETTER.

Department of the Interior,
Bureau of Education,
Washington, March 31, 1885.

Sir: The necessity for a sufficient number of thoroughly trained teachers in the establishment and maintenance of a satisfactory system of common schools has long been generally acknowledged, and the importance of institutes in fitting teachers for their work, especially in the absence of good normal schools, has gradually come to be recognized. I have found it impossible in my annual reports to treat these institutes with the detail that their importance demands. I therefore engaged Hon. James H. Smart, formerly State superintendent of public instruction in Indiana and now president of Purdue University in that State, to prepare the accompanying compilation. Mr. Smart has been so successful in adding to the efficiency of the teachers' institutes in Indiana and aided so largely in conducting institutes in other States that he has become an acknowledged authority in their management. In making this compilation he has used such facts, opinions, and suggestions as could be gathered from State reports, public addresses, school journals, and personal correspondence.

Teachers' institutes had their origin in private associated undertakings, and in but a part of the States are they now established and provided for by law; hence information concerning their history has not been easy to obtain and hence also this paper is only a contribution to the subject. Mr. Smart has given a large amount of space to reports concerning the Peabody institutes because he believes that they have introduced a great era of progress in the educational history of the South. In view of an impression which seems to have gained considerable ground that institutes, as commonly conducted in some of the States, have opposed or injured the normal schools, the opinions of normal school principals quoted by Mr. Smart will be read with interest.

It should be observed that there is a great want of uniformity in the various States in respect to the ways of organizing and paying for county and State institutes. In but few States are institutes required to be held; in some, institutes are organized into a State or district systems and in others into county systems; in some the institutes are held under State authority and in others under local authority. In some cases the expenses are paid by State funds; in others, by county funds; in others, by contributions from the teachers; and in still others, by the fees for teachers' licenses. In some cases the institutes are held at a regular time when the schools are closed and in others they are held at any time the local authorities may choose throughout the year and when the schools are in session; in some the schools are closed during the sessions of the institute and in others they are not; in some the city schools are closed during the sessions of the county institutes and in others they are not; in some the teachers are paid for attending and fined for not attending and in other cases neither course is pursued.

The aims, purposes, and methods of conducting these institutes in the several States are exceedingly diverse. It is evident that the institutes as a whole have been a means of great good and have probably been worth far more than they have cost; but it is also clear that, from lack of thorough organization and professional management, they have produced only a part of the good results possible. The facts presented in this report show that institutes often may not only be valueless practically, but a positive source of mischief to the teachers and to the schools.

In studying city systems it will be discovered that there is such a great variety of aims, purposes, means, and methods indicated in their management that it is difficult to make any satisfactory classification in regard to them. In a very large number of our cities no teachers' meetings for conference or instruction are held. The superintendent of one of the largest and most important cities writes in substance as follows:

> There is a normal school supported by our city, in which teachers are trained for their work, as well as may be, prior to their appointment in the schools. No other instruction is now offered upon which the attendance of teachers is required. * * * Whenever circumstances allow, the regular professional instruction of teachers should precede their induction into office; what follows should be more in the nature of directions as to the special duties of their particular positions. This is in some measure the principle upon which it is safe to go in our city.

It is hoped that this report will serve to call the attention of the teachers of the country to a very important subject and that it will afford the basis for a thorough discussion of it.

I have the honor to be, very respectfully, your obedient servant,

JOHN EATON,
Commissioner.

The Hon. SECRETARY OF THE INTERIOR.

Publication approved.

L. Q. C. LAMAR,
Secretary.

CHAPTER I.

TEACHERS' INSTITUTES AND THE PUBLIC SCHOOL SYSTEM.

The United States expend public funds more liberally for public schools than any other nation of corresponding density of population. The vast territory within their boundaries is sown more or less thickly with free school-houses, wherein for some part of every year, longer or briefer according to the amount of available funds, teachers paid from the public purse dispense instruction to all the children of school age who may by the law of the State be enrolled.

That the results are not greater is to some a matter of wonder, to others a subject of malicious though hidden rejoicing, and to yet others a topic for serious consideration and constant labor. The chief cause of this imperfect attainment is, confessedly, the comparatively small quantity of tutorial ability possessed by the teachers as a whole. Among them are hundreds and thousands of excellently equipped instructors; the spirit and purpose of a yet greater number are praiseworthy, but the lack of trained ability to teach well is and always has been the weak point in the schools of the country. The causes of this condition are not difficult to discover. Usually the local authorities in charge of a public school have only a small sum of money at their disposal for the payment of a teacher. This money is derived, in most cases, partly from the proceeds of a local levy or tax and partly from the apportionment of the school moneys of the State. Whenever the law of the State requires that the school be taught any specified number of days before the apportioned amount can be drawn from the general fund, the local board must employ some person as a teacher who can be hired to do the minimum quantity of "teaching" at a compensation not exceeding the locally collected amount in the school treasury. The reward of labor being small, the quality of work done is almost always poor or at the most mediocre; the salary offered tempts only young women who want an addition to their scanty pocket money or young men who teach in order to procure means for the prosecution of their own studies during the rest of the year. The teacher's place is often filled by the most needy male or female relative of a school trustee. The teacher so selected can, with little trouble, procure a license to teach for a year, and sometimes for a longer time, by answering a few questions about geographical facts and making one or two simple arithmetical calculations selected by an "examiner" or "county superintendent," or other similar official, to whom a small fee, for the labor of examining the candidate and issuing the license, is due by law. Indeed, when the authorized examiner is unfaithful or indifferent, he may license the candidate and pocket the fee without holding any examination at all. The local and favored candidate need not fear much competition for the position from a stranger, because travelling expenses would swallow up no small part of the meagre pay earned, even if the stranger should succeed in obtaining the position; on the other hand, the money earned is often enough to add much simple comfort to the life of the home dwelling teacher.

Under such circumstances the employment of a thoroughly competent instructor in rural schools is sometimes difficult. The well trained graduate of a normal school can obtain better pay in the employment of towns and cities, where books, newspapers, and society of some sort are easily procured; and the growth of our urban population has created a demand that so far much exceeds the supply of good and normally trained teachers. Therefore, the rural schools usually must be content to employ some person of good character but limited teaching power.

The rural teacher, being usually ill paid, is usually a woman; and as yet, in the United States, most young women can, if they wish, be married. Thus it happens that the ranks of the profession are deserted yearly by thousands of young women who marry and by many young men who enter the ministry, the bar, or begin the practice of medicine. The places of these teachers, who have learned at least some part of their business by working at it and by attending the teachers' institutes, which form the subject of this pamphlet, are supplied, as already indicated, by recruits themselves not long released from school.

This widespread and lasting condition of things explains the necessity for supporting and maintaining teachers' institutes in addition to normal schools. How early in our national history the want of trained instructors was felt is shown in the department of superior instruction by the proposition, seriously made during General Washington's lifetime, to transplant the entire faculty of arts from the Swiss college at Geneva to the proposed university in the District of Columbia. With reference to the public schools in New England, it is known that Dennison Olmstead, a graduate of Yale College, had projected a plan for a schoolmasters' academy, and that in his thesis for the degree of master of arts, in 1816, he showed that the low condition of common schools at that time was caused chiefly by the ignorance and incompetence of their teachers.[1]

Professor James L. Kingsley, of Yale College, in 1823, proposed that intermediate schools be maintained in every county for the thorough instruction of those who wished to teach in common schools.[2]

The eminent and Reverend Thomas H. Gallaudet elaborated the importance of teachers' seminaries in a series of essays published in 1825 at Hartford, Conn.[1] When the States began to take a more active and general interest in the education of their inhabitants and the public school had begun to be the acknowledged child of the Commonwealth, the increasing need for trained teachers was answered, as early as 1839, by the systematic training of a limited number in Hartford, Conn., by Dr. Henry Barnard and his faithful friends.[2]

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[1] Barnard's American Journal of Education, V, 239.

[2] North American Review, XVI, 392.

This training included a review and extension of the topics then usually taught in common schools, and also a thorough instruction in pedagogics.[3] Thus normal schools and teachers' institutes began their work in this country almost at the same time, and either together or separately began to extend over other States.

A teachers' institute (then first so named) was held in 1843 by J. S. Denman, school superintendent of Tompkins County, New York. This lasted two weeks and was a revelation of the new agent in school improvement.[4] Nor can we fail to recall the lucid and most interesting accounts of the early teachers' institutes in Massachusetts as described by Horace Mann,[5] and his equally famous successor, Barnas Sears,[6] who, after a career more varied and a life much longer, sleeps, covered with years and honor, after having administered the resources of the Peabody education fund with even more than his wonted sagacity, industry, and equity.

Attentive readers of State school reports and educational periodicals will also recall many other useful and valuable observations of others, such as Ira Mayhew, of Michigan, in 1847; H. H. Barney, of Ohio, in 1855; G. S. Boutwell, of Massachusetts, in 1857; David N. Camp, of Connecticut, in 1857 and again in 1864; Newton Bateman, of Illinois, and H. H. Van Dyke, of New York, in 1860, besides many others in more recent years. The limits of this circular do not permit any further mention of these solid and convincing arguments, and the editor must refer to the reports and journals cited for a more particular knowledge of their import.

The growth of the population within the Union has much surpassed the establishment and maintenance of normal institutes and teachers' institutes, even from the time when they became recognized parts of the best public school systems. The absolute impossibility of confining instruction in practical pedagogics to normal schools has obliged us to use institutes as a necessity. Doubtless other and additional reasons for so doing have existed in past times and may exist now in different places. For example, when normal schools are few and small or where they have not yet been founded, the institute must acquire at once much greater importance as an educational training appliance, and under such circumstances we may expect to find it assuming the proportions and duties of a peripatetic teachers' seminary, often extending its sessions into weeks, enlarging its program of instruction, and increasing the number of its methods and appliances for attracting or retaining the public favor. In a new community the institute obviously may be of very different relative value when compared with its worth or uses in an older and more variously cultured place or epoch. At one time it may be useful in solidifying and concentrating public sentiment in favor of public schools; at another, it may prove vastly useful in disseminating useful knowledge about the nurture, instruction, and culture of youth throughout the whole community; at another, it may be useful chiefly for the effective instruction of the teachers attending it in the most useful and practical methods of conducting and teaching their schools; and at another time it may serve most effectually to imbue a corps of teachers, hitherto working towards various and conflicting results, with vital unity of purpose and common sympathy of thought. All these and many other uses of the institute have been tested since it was first introduced by Dr. Barnard. Without doubt it is destined to an equally useful and varied career in different parts of the country, new and old, during the future.

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[1] Barnard's Journal, V, 129.

[2] See William Russell's Suggestions on Teachers' Institutes, page 9.

[3] Journal of the Rhode Island Institute of Instruction, II, 369.

[4] New York school reports, 1843, page 613, and 1849, page 136.

[5] Massachusetts school reports, 1843–'44 and 1844–'45.

[6] Massachusetts reports, 1848–'49 to 1853–'54.

CHAPTER II.

THE RELATION OF TEACHERS' INSTITUTES TO NORMAL SCHOOLS.

The question What is or should be the proper relation of the teachers' institute to the normal school? is answered from different points of view by letters from principals of normal schools, which are reproduced in substance later in this chapter.

The testimony of these normal school principals is valuable. It shows that the writers as a body believe that properly managed teachers' institutes are useful auxiliaries to normal schools wherever those schools exist, and that they are important (though not perfect) substitutes for normal schools where those establishments have not yet been organized. Where good normal schools have been working for a number of years, teachers' institutes need not be continued very long at one time; they should revive the spirit, confidence, and professional feeling of the teachers, stimulate them to self improvement, and, through a judiciously graded course of study and teaching, review what they knew before and increase their practical acquirements. It is clear that the objects, methods, duration, and results of such institutes must differ much from those of institutes held under other circumstances. Where there are no normal schools of approved excellence, where the public as well as the teachers need to be enlightened, where the attendance is voluntary, the work assumes an entirely different appearance; the institute properly extends its time, embracing weeks instead of days, and covers in its course of instruction many topics not necessary under the more favored conditions already indicated. Many of the mistakes now made in the management of institutes at the present time seem to occur because this difference of condition is not allowed to govern the amount, kind, and method of instruction given.

There are, however, other causes of failure or only partial success to which these letters call attention. Institutes are sometimes managed as money seeking ventures, sometimes as occasions for personal display; and both speculators and hobby riders do much harm, not only by wasting the time they occupy, but by causing their victims to distrust and underrate institutes in genera as an instrument of personal and professional culture.

The reader, bearing in mind the circumstances in each case, will derive benefit from a judicious study of the replies, were received chiefly in 1883, which, with the questions, are here appended:

SPECIAL INQUIRY CONCERNING TEACHERS' INSTITUTES.

(Excluding permanent normal schools and voluntary teachers' associations.)

Name of State, ; year ending

I.

CONCERNING INSTITUTES ESTABLISHED BY STATUTE.

1. If you have a State or district institute system, (*a*) How many State institutes were held? Length of time of each held. (*b*) How many district institutes were held? Length of time of each held. (*c*) Conductors, how appointed? (*d*) Expenses, how much for each district or for each State? (*e*) Expenses, how provided? (*f*) How much, if any, tuition was charged? (*g*) State facts in regard to aggregate number of instructors: Teachers in attendance, public lectures, &c.

2. If you have a county institute system, (*a*) How often held? In how many counties were they held? Aggregate number of institutes. For how long time was each held? (*b*) By whom conducted? (*c*) Expense, how provided? (*d*) Is attendance compulsory? Penalty for non-attendance. (*e*) Do teachers make voluntary contributions for expenses? If so, about how much a week? (*f*) State facts in regard to aggregate cost for entire State, total enrolment for the State, total average attendance, number of instructors, number of public lectures, &c.

3. If you have a township institute system, (*a*) How often held in each township? Length of time each is held. Is attendance compulsory? What is the penalty for non-attendance? (*b*) By whom conducted? (*c*) Expenses, how provided? (*d*) State facts in regard to aggregate number in State, aggregate enrolment, average attendance, aggregate cost, &c.

II.

VOLUNTARY OR PRIVATE INSTITUTES.

State facts in regard to number, length of time each was held, aggregate enrolment, average attendance, cost of same. Expenses, how met?

III.

If you have any additional statistics in relation to institutes in printed form, please send them. If you have printed programs or courses of study that have been used or are to be used for institute work in State, county, or township institutes, please send them.

IV.

In order that a satisfactory examination of the school laws of the several States as they relate to this question may be made, I venture to request that you will transmit a copy of the last edition of your school laws, together with any amendments of a later date regarding teachers' institutes that may have been adopted.

V.

Please give a brief history of the development of your institute system, showing its orgin and its progress as marked by the successive changes in the law. State also what defects, if any, you observe in the working of your present system, and state the changes which you think necessary to make the institute system more efficient.

LETTER OF D. B. HAGER, LL. D., PRINCIPAL OF STATE NORMAL SCHOOL, SALEM, MASS.

I am so closely occupied with the work attending the close of my school term that I am obliged to answer your questions very briefly.

(1) I place a high value on "teachers' institutes" as conducted in this Commonwealth. For some years it has been the practice to hold a considerable number of institutes, each for a short time, usually two days. The exercises are of the most practical character and are conducted by the secretary of the State board of education, the agents of the board, and teachers from the normal schools, with occasional aid, in the way of lectures, from other persons. These institutes serve not only to instruct and stimulate teachers, but also to arouse and maintain among the people a profound interest in the welfare of their schools.

(2) I am not aware of any evils resulting from the kind of institutes here supported. They interfere in the smallest possible degree with the regular work of the public schools, and they do not give any teacher occasion to suppose, as is sometimes the case elsewhere, that they are substitutes for normal schools. On the contrary, they tend to excite a desire on the part of many teachers to obtain the advantages of normal training.

(3) Not knowing any important evils resulting from such institutes as are held in Massachusetts, I have no reason to suggest corrections.

(4) The law of this State gives to the board of education entire control of the institutes, so that it can manage them according to its own judgment; hence there is no need for a change in the law.

LETTER OF D. J. WALTER, JR., PRINCIPAL OF STATE NORMAL SCHOOL, BLOOMSBURG, PA.

In reply to your circular of inquiry of June 9:

(1) Teachers' institutes as now conducted in this State are of inestimable value in their effect upon the teachers and directors immediately interested and upon the cause of education throughout the length and breadth of the Commonwealth.

(2, 3) I know of no evils that should be charged to them as "results." In such assemblies there are often teachers without tact, and even deficient in common sense, who will greatly err in the use of the instruction given; but such errors are chargeable to them rather than to the institutes. I have yet to learn of the first "evil result" to the cause of education from the existing system of teachers' institutes. The mistakes made in conducting them are innumerable. They must be adapted to the wants of the county in each case. A Lancaster County institute in Potter County would be death to the superintendent and an injury to the cause. They are sometimes arranged on a scale too costly and often the opposite extreme is reached. The mistakes can be corrected by discarding superintendents not qualified and by retaining good superintendents through many years, that the cause may have the benefit of their experience.

In answer to the fourth question, I have changed my ground. When new to the work I favored many changes, but observation and experience have greatly modified my views. For example, it seemed to me perfectly clear that the State would gain by having professional instructors, on salary, to do the work, as in New York. A comparison of results shows, however, that the Pennsylvania plan is far better. A longer term was also a change that seemed to have much in its favor, but even on this point I am not as zealous as I was earlier. There is a deference to localities, to the good sense of each superintendent, an adaptation, a regard for personal elements, so valuable in all educational movements, that atone for any apparent want of system.

LETTER OF PROF. I. N. CARLETON, PRINCIPAL OF STATE NORMAL SCHOOL, NEW BRITAIN, CONN.

Your letter of inquiry respecting institute work in the South has come to hand.

In response to it I would state that I have done a little of such work in Texas. Last summer, from July 6 to August 16, I was in charge of a summer normal school for colored teachers at Austin, Tex. The total number enrolled was sixty. The organization was like that of a school. We had one session a day for five days in the week. This session was divided into periods of about forty minutes each. During each period some subject was taken up with the whole school, handled like a class in a regular normal school. The course of study was necessarily somewhat restricted. Attention was given to language teaching, arithmetic, geography, gymnastics, mental combinations, and criticism. A careful course of lessons was given in psychology and ethics, and great and intelligent enthusiasm was aroused in these studies. School management was discussed to some extent, Dr. J. Baldwin's book on this subject being used. The teachers of the school were Isaac N. Carleton, Mrs. Laura T. Carleton, Rev. William E. Brooks. Dr. J. Baldwin and two or three others gave one or two lectures each. The interest in our Austin institute was most gratifying, and it continued up to the very close of the term. I have reason to believe that this summer school did much good.

LETTER OF S. N. FELLOWS, D. D., PROFESSOR OF DIDACTICS, UNIVERSITY OF IOWA.

The first organization under the statutes of Iowa for the improvement of teachers in public schools was called a "teachers' institute." It was held but a single week, with one conductor or instructor, and there was no classification of teachers. All the teachers attending from a county were taught together in the form of general exercises, and the "pouring in" (or on) process was largely employed.

About ten years ago the school law was so amended as to provide for "normal institutes." The normal institute differs from the former teachers' institute in the following respects, viz:

First, the time is extended to three or four weeks.

Secondly, the teachers are divided into three or four grades, according to scholarship and experience.

Thirdly, practical and experienced educators from colleges, academies, high schools, and graded schools have been called into the field as instructors.

Fourthly, a graded course of instruction covering four years has been prepared for normal institutes, under the direction of the State Teachers' Association.

Fifthly, didactics is recognized as a full study in each year of the course.

The theory of the normal institute is that the study, the learning, should be chiefly done by the teacher at home. Self reliance, home study, self teaching, are encouraged and promoted to the greatest possible degree. Teachers should be "learners who educate themselves" under the stimulus and direction of the normal institute. The work of the normal institute is therefore threefold:

First, to examine teachers upon the work done at home during the previous year.

Secondly, to give such instruction as examinations show to be most needed.

Thirdly, to lay out the work for the year to come, with references and suggestions so specific that all can understand.

Such is our ideal normal institute. In some counties commendable efforts have been made to carry out the above plan, and classes have passed required examinations on the course of study and on graduation have received a suitable diploma. It is to be regretted that more counties have not done so.

Among the advantages of the institute may be mentioned the following, viz:

(1) The social advantages. Country school teachers are isolated and deprived of

the inspiration that comes from association. They ofttimes are lonesome, heartsick, and discouraged. The annual reunion of the institute is like an oasis in the desert.

(2) Direct aid is given to the teachers in their work. A problem is solved, a difficulty removed, a principle explained that has given trouble for years.

(3) The professional standard is raised. The best and most skilled teachers are brought to the front, pretenders and quacks are revealed, and the profession is sifted. Higher ideals of the teacher's work are established.

(4) The professional spirit is quickened. Each teacher realizes that he belongs to the grand army of teachers.

(5) Through lectures and addresses an increasing interest is awakened in the public mind in regard to the teacher's work. Teachers and parents obtain broader views and appreciate more highly the value of the public school.

(6) It brings parents and teachers nearer together, causes a better understanding, and increases the appreciation of the teacher's difficulties and work, and secures, consequently, greater sympathy and support.

Fifteen years of observation in the institutes of Iowa have shown me a marked improvement in all these respects.

The "evils that result from them and mistakes made in conducting them" are as follows:

(1) Drifting into irrelevant discussion. A quibble, a puzzle, a technicality of no practical value, ofttimes engages an institute for half an hour. The time of an institute in too precious for such trifling.

(2) Of wasting time in unimportant matters. This refers to opening and closing exercises and all business management of the institute.

(3) Of cramming. There is no "short cut" to good scholarship. Cramming is not teaching. To veneer an ignoramus does not make of him a scholar nor fit him for a first class certificate. When examinations are held at the close of an institute, based upon the instruction of the institute alone, and certificates graded according to said examinations, it is not too much to say of such certificates that they are frauds, frauds upon the teachers themselves and upon the public.

(4) Too frequent change of conductors and instructors of the institute. Sometimes instructors are changed every year. Why not, with equal propriety, change teachers every month in our graded schools?

"What are the faults of the present system of institutes and what changes needed in the existing law governing them?"

It is believed that the chief faults are not in the system of institutes, but in the administration of that system. Nor are there any great changes needed in the law relating to institutes. We would merely suggest that the law be so amended as to require higher scholastic and professional qualifications for the office of county superintendent of schools, and that his tenure of office be longer continued; and that there be given to the State and county superintendents, or to a State institute board created for that purpose, greater authority and power to direct and control the work of the institute so as to secure the best possible results.

LETTER OF EDWIN C. HEWETT, LL. D., PRESIDENT OF THE STATE NORMAL UNIVERSITY, NORMAL, ILL.

Your circular is at hand, and I hasten to reply. Perhaps your remark about excluding "normal schools and voluntary teachers' associations" would cut off any reply from this State, as nearly or quite all our institutes are voluntary. We have no "system" in this State. A few counties grant some funds for the institutes, but in general all the expenses are paid by the teachers.

(1) Our institutes are productive of much good, in my opinion, although their value varies greatly; some are worth but little.

(2) They are usually managed by irresponsible parties; some of them, under the

name of "normals" and "drills," are the speculations wholly of private persons. In general, the work is more frequently "a cram" for examination than anything else.

(3) Our law merely permits counties to appropriate money for institutes and recommends superintendents to aid in holding them. As I look at it, the State should take them under control, should establish them by law, provide for their support, and pass upon the fitness of their conductors; the work should be directed less to mere acquisition of facts and more to a study of the philosophy and practice of school work.

Such, in brief, is my impression of the state of affairs in Illinois. We have so called institutes in great number; but all is "chaos."

LETTER OF ROBERT ALLYN, PRINCIPAL OF SOUTHERN ILLINOIS NORMAL UNIVERSITY, CARBONDALE, ILL.

I have the honor to reply, in brief, to your circular of the 9th instant, as follows:

(1) The institutes for the instruction of teachers in our State, according to my observation, are of about three kinds: (*a*) One class continuing about a week and chiefly occupied with general lectures on educational topics concerning the people and schools at large; (*b*) a class held by county superintendents for from three to six or eight weeks and having the character of very superficial review schools for the common branches and the study of the natural science topics; and (*c*) a class of about two weeks held by the teachers of a county, where each one occupies an hour or two in showing what he calls his "method" before a volunteer class of the members of the institute.

As to their value, this last seems to me almost a farce, and the second only a provisional and often so superficial a thing as to be in the way of good normal school instruction and discipline. The first, as I regard it, is very valuable to inspire a common interest and a spirit of honor in teachers, and to stimulate the public to honor the profession and to improve the schools. I think institutes do more for the people than they can for the teachers. These need school study and training.

(2) I have very nearly answered the second topic in my first reply. To repeat, the great mistake is to suppose they, in their brief time and with their few instructors and fragmentary methods, can prepare the teachers for their work. And the evils are manifold when they are carried on as exhibitions for hobbies.

(3) The remedies are two: Let the design or purpose or work of them be distinctly stated, to inspire both people and teachers, and, second, let every State obtain a faculty of lecturers, who shall spend about a week in each county, year by year, in different towns, for these objects—say not less than two men at a time and generally three during the week. Six men, at an annual expense of $15,000 to $20,000, would cover a State like Illinois or Indiana or Ohio.

(4) "The faults of the present system" are in a word: there is no system. It is natura pura, working blindly, now in one way in one year and another in another year, one thing in Northern Illinois and another in Southern Illinois. We need a law not only providing that county superintendents may hold them, but prescribing that they shall hold them, and that according to rules made and enforced by the State superintendent.

These are my thoughts, very briefly stated.

LETTER OF PROF. W. D. PARKER, PRINCIPAL OF STATE NORMAL SCHOOL, RIVER FALLS, WIS.

Responding to your inquiries of the 9th instant:

(1) There is no question of the efficiency of teachers' institutes in Wisconsin as a ready means of effecting the unity of educational purposes, progressive study of methods of teaching, and actual teaching of branches of study. The institute seasons are March and April, August, September, October. During these seasons there is an awakening among teachers and friends of education that gives importance to the work of teaching throughout the State.

(2) The chief evil of the institute inheres in the limited contact as a fact; whereas many teachers expect the institute to provide some other method for learning than self activity, and these take on simply the manner of the institute conductors in their own school, some discover their mistake, and thus relieve the institute from being for them an unmixed evil.

The chief mistake of conductors is found in too much esoteric work, rather than a compound of matter and manner that is calculated to elicit enthusiasm and promote study.

(3) These errors of teachers and conductors can be remedied in part by strict supervision of the institute by authorities already organically related to them.

(4) Existing faults are already outlined. No legislation is necessary to make institutes more efficient.

LETTER OF GEORGE L. OSBORNE, PRESIDENT OF STATE NORMAL SCHOOL, WARRENSBURG, MO.

In reply to your inquiries of June 9, I have the honor to submit the following statements:

(I) Except in one county, Jasper, there is no legal provision for teachers' institutes in this State. In that county the meetings are usually held once a year and continue from two to three days. The plan adopted in these meetings is mainly that of lecture and discussion. There is considerable enthusiasm awakened, and, as a consequence, the teachers return to their work with renewed energy.

(II) The results, however, are not as enduring as could be had under a different plan of management. The work is too desultory and the teachers most in need of instruction are too often absent.

(III) What is most needed with us is a law establishing institutes throughout the State.

(1) Attendance upon the part of teachers should be compulsory.

(2) There should be provided a public fund for defraying the expenses of a course of instruction and lectures.

(3) The sessions of the institute should be at least four weeks in duration annually.

(4) There should be a course of study embracing (1) academic drill in the common school branches, including the school laws of the State; (2) drill in the leading phases of school economy, as school organization, class management, discipline, recitation, school tactics, school ethics, &c.; (3) a course of brief practical lectures on the hygiene of the school room, including light, heat, ventilation, &c.; (4) a pointed drill on methods of teaching the common branches, including primary methods especially.

This looks like a large spread of work for four weeks, but it indicates the line of training most needed in this section of the West.

Voluntary institutes, following to some extent the plan above indicated, have already been successfully established in a number of the counties of the State. One in Cooper County has gone so far as to introduce some of the features of the training school.

The teachers' institute of ten years ago has served its purpose and must give place to something more practical and incisive. The few glib talkers among the teachers of a county, who under that dispensation measured lances for the amusement of the "crowd," must surrender to those who will lead rather than amuse, who will train rather than talk.

LETTER OF T. MARCELLUS MARSHALL, PRINCIPAL OF STATE NORMAL SCHOOL, GLENVILLE, W. VA.

(1) "The value of teachers' institutes as now conducted in your State" is considerable, though very unequal in the different parts of the State. It is difficult to esti-

mate their value, as no basis of value is mentioned in the circular letter containing the inquiries. Besides, these values are so diverse in kind that one scarcely knows what line or lines of worth to follow in making the statement requested by you.

To a great extent the conductor of the institute is directly responsible for the whole conduct and worth of it. But the grade, interest, and liveliness of the teachers themselves and of the public where the body convenes, or the lack of these characteristics, affect vitally the workings and the worth of our institutes.

These contingent affecting causes make the question still more difficult to answer properly for the entire State, or even for a single county, from year to year.

My opinion is that they are of too much value to be discontinued or dispensed with even in the poorest and least worthy instances, while in many places their value is so great as to be unquestioned by their most skeptical opponents.

Some of their chief points of worth are:

The esprit de corps they create: the tendency to gather the teachers together and to induce a professional feeling among them in those counties where there is little or no such feeling in existence and to stimulate a spirit of progress and honorable emulation in such counties as have made in some degree the work a profession of more or less learning and dignity;

The literary or text book instruction received. This is especially true where the grading is poor or the grades are low, which is the case in a majority of our fifty-four counties. Short as the time is, there are many errors that can be pointed out, as well as many unlearned or poorly understood facts, for which the teachers attending are ripe, that can be made plain;

And the instruction in methods and principles of teaching and in organizing, conducting, and controlling schools. This I regard as the legitimate, formal, direct work and province of institutes, and this alone. To my mind there is a wide difference between an educational association and a teachers' institute.

(2) "Evils that result from them and mistakes that are made in conducting them" are exceedingly numerous, but probably not, as a whole, very grave. I refer to the latter rather than to the former, too. I confess gladly that I can think of no serious evil that flows, directly or indirectly, from institutes themselves, even when poorly managed, unless it be the disrepute into which they themselves are sometimes brought.

As to the mistakes made in conducting them, I have little to say. I fear to begin on so long a list. I believe that an institute should be a short professional school; that it should be taught and controlled by its regularly constituted leaders; that its program should be specific, narrow in its range of topics, and adapted in its scope and the height and degree of difficulty of its topics to the pupils (teachers) of which it is composed. It should be rigidly adhered to and exhaustively developed, but should not be absolutely inflexible. Above all, subjects should be treated suggestively rather than dogmatically, leaving the teachers to be guided by good sense and correct principles rather than by empirical or other formulæ.

(3) "How can these evils be remedied and these mistakes be corrected?" By more thoroughly equipping normal schools, by the State superintendent making sure that those he appoints to conduct institutes are sufficiently well qualified to do so and are orthodox in their views and methods of organizing and conducting them, and by requiring all teachers of institutes to attend a school or institute for conductors of institutes before they are permitted to enter upon their own work.

(4) "What are the faults of the present system and what changes would you suggest in the existing law governing them?" This question is too big for me. It is comparatively easy to find that something is wrong, but it is exceedingly hard to suggest something that is both theoretically and practically better. Apropos to this, a few years since this State passed a compulsory attendance institute law, which deducted a pro rata sum from the salary of every teacher who failed to attend institute two days in addition to every twenty taught by him. This was the most unpopular (and hence impracticable) law we ever had. Both teachers and taxpayers execrated it, and the

next legislature repealed it with scarce a dissenting voice. The features that met my hearty approval were the ones that condemned it in the eyes of others.

Teachers cannot now get a certificate to teach until they have presented a certificate of attendance upon an institute or that of their physician that they were physically unable to be present during the term of institutes. The friction of this law is strictly personal, local, and scattered; hence it works well.

One program is made for the State. It does not, cannot, owing to diversity of wants, suit the majority of the gatherings to which it is applied. Different ones (some half dozen for the State) would measurably remove this feature.

Some instructors engage in the work for personal or political aggrandizement, or both, and pander to the whims of any and every person who desires to push himself or his pet theories and questions before the body.

County superintendents should be eligible to that office on professional qualifications only, one of which should be a thorough acquaintance with the principles and methods of institute work. No test is required.

Better pay is necessary to get good conductors.

Five days a year is now the full time; it should be ten or fifteen.

LETTER OF N. P. GATES, PRINCIPAL OF NORMAL DEPARTMENT, ARKANSAS INDUSTRIAL UNIVERSITY, FAYETTEVILLE, ARK.

Your communication relating to institutes in the United States is received. I will speak of the topics in the order in which they occur:

(1) Institutes in this State have, I think, had some value, but not as much as would result from a different method.

(2) I think that no evils *need* result; but perhaps shallow and empirical work, and almost its opposite, the raising of expectations without the time to satisfy and verify them, the tearing down of old methods without time or ability to put something better in their stead, are some of the evils.

(3) By making the session long enough to do the work *well* and by employing no one to teach who is not skilful and prudent or such as can do the work well.

(4) The faults of our present system, I think, are a tendency to waste the time in useless debates or windy addresses on subjects not always germane to the work in hand, and want of instructors who themselves know and can apply the true methods of instruction and training, especially for little children.

Any legislation, I think, will prove abortive unless supplemented by skill in doing the work of the institute.

LETTER OF PROF. J. C. GILCHRIST, PRINCIPAL OF IOWA STATE NORMAL SCHOOL.

The value of teachers' institutes in Iowa is great. They are the means that reach the great body of teachers and do something for the general improvement of schools. Without them there would be a great void; there would be no sowing of educational seed, no nourishment of professional growth, and no kindling of enthusiasm for the cause of education.

The number who attend annually has been nearly equal to the whole number of teachers required for our county schools. The length of time during which the institutes are in session ranges from two to six weeks, the average being about three weeks. The legal and technical name is "normal institute." Normal institutes were first held in the autumn of 1874 and took the place of the one-week institute formerly held. From year to year, courses of study planned for a four-week institute have been prepared by committees, under the direction of the superintendent of public instruction, designating the work to be done in each branch for each day of the session. A course now exists for a full four-year attendance, the student completing the same receiving a certificate. This is not authorized by law, of course, but rests on a common assent of prominent schoolmen.

That institutes are valuable is denied by none. Young teachers obtain their first notions of true educational principles and the most approved methods; they get deep impressions concerning their obligations and responsibilities; they learn the correct views respecting school government and accept the counsels of experience, and, above all, they acquire a love for the great cause of education and a consequent devotion thereto. It is not to be supposed that all this is secured by every one or that all institutes have such desirable tendencies, but the general drift is certainly in these directions.

County superintendents and visitors testify to the efforts made to carry out the plans and principles enforced at institutes. Even the more experienced teachers acquire a more exact scientific knowledge, perfect their practical processes, and enlarge their views on all educational topics.

Of the mistakes made in conducting Iowa institutes, it can be safely said that the courses of study already described produce formality and rigidity and suppress the specialties and intuitions of the conductor. This is certainly a great loss when such qualities in their true nature are present. If anything is effective over the mind of the young teacher, it is the manifestation of aptness to teach, of intellectual inspiration and fervor, of a broad vision and firm grasp of an extended subject. Such courses of progressive study are excellent theoretically. It is intended that uniformity in the institutes for each year throughout the State will be approximated at least, and it is thought that this is desirable; but the migrating tendencies of our population, the continual changing of teachers as to their positions, and the short average time of their remaining in the vocation render a systematic course for the vast majority nearly impracticable.

Our institutes are looked upon by the teachers as profitable chiefly to prepare for the certificate examination. This view rules in the minds of many county superintendents as well as of teachers. The last two days of institutes are given up to examinations, and in many instances the questions follow the instruction that has just preceded. Many superintendents make all certificates expire at the usual time for holding the institute. It is very often broadly hinted that a teacher's chances to get a certificate are greatly enhanced by attending and greatly diminished by not attending. The temptation to do this arises from the fact that the funds for meeting the expenses of the institute are derived from the payment of $1 by each member and $1 on entering the examination for a certificate. Thus, a member of the institute who also enters the examination pays $2 to the institute fund, but a teacher entering the examination only pays $1.. (It is well to say in this connection that each county institute receives $50 from the State treasury.)

It is well known that not a few teachers do no better than make a pretence of an attendance on the institute. They put in an appearance, pay the dollar, stay one or two days or a little longer, and then return home. In this way they get the credit of membership and yet save their labor for home employments as well as the expenses for boarding. Another mistake of considerable moment is the employment of instructors who have not the necessary qualifications for institute work. Much pressure is brought to bear on the county superintendent to employ "home talent," and he cannot forget that this home talent is a friend to him in the day of need.

Before turning to make suggestions for the correction of these evils, it must be said that the general plan of Iowa institutes is excellent and no fundamental changes can be proposed. A three-week session instead of one, the general management in the hands of the chief educational officer of the county, the payment of expenses by money chiefly derived from the teachers themselves, are the decisive features of our system which receive universal approval.

The following recommendations are made:

(1) A board should be created to grant institute licenses to such teach[illegible]

produce satisfactory evidence that they possess the necessary "gifts, graces, and usefulness" for institute work. The evidences should consist more in the form of an authenticated report of the candidate's scholarship, reputation, experience, and special ability for this kind of service than of the results of a formal examination. County certificates and State certificates should not be taken as sufficient evidence.

(2) The plan of work for each institute should be devised by the county superintendent, in counsel with his conductor. Some elements of a system running for a series of institutes will be adopted by every county superintendent of average discernment, but he, in conjunction with an experienced conductor, can meet surrounding circumstances and immediate wants better than a distant committee writing months and years beforehand.

(3) The régime founded on the maxim "The normal institute is a school" ought to be modified so that the institute should have in it something of the elements of a popular assembly. It should have the latitude of inquiry to satisfy individual wants, but, above all, the enthusiasm appropriate to a great cause. We need in our teachers heart as well as head; an esprit de corps in our institutes, rather than the regularity of a military manœuvre.

(4) Efforts should be made to awaken a strong educational feeling in the minds of the people. Attractions in the way of lectures, not on education alone, but on scientific and popular questions, should be secured and the people drawn out to hear. Instances can be given where the people look forward to the institute with expectations of pleasure and profit, and they, as well as the teachers, go home fortified in their resolves to adopt better and broader plans for school administration.

(5) Great care should be taken to secure instruction in true educational philosophy and the best modes of teaching. Subject matter should not be allowed to crowd out professional training.

(6) County superintendents should give great care to the preparation for the institute. Attendance should be pressed on the attention of the teachers at an early day, and the value and dignity of the meeting made prominent before the people. All the details should be carefully attended to and all useful and attractive accessories secured.

(7) Some substantial recognition of attendance for the full session should be given, and after an attendance for some suitable number of terms a certificate of release from further attendance. Of course voluntary attendance thereafter would always be acceptable.

LETTER OF PROF. HENRY SABIN, COUNTY SUPERINTENDENT OF SCHOOLS, CLINTON, IOWA.

The normal institute, as peculiar to Iowa, has these advantages:

(1) The funds to support it are not raised by taxation. Each teacher pays $1 for examination, whether a certificate is granted or not; an enrolment fee of $1 is also collected from each member of the institute. An amount is thus secured each year which, with $50 from the State treasury, proves sufficient for all practical purposes.

(2) The amount thus received is paid into the county treasury and is then designated as the "institute fund;" this fund can only be disbursed, upon the order of the county superintendent, for expenses connected with the institute. The county superintendent is thus rendered entirely independent of all other county officers as far as the use of the institute fund is concerned.

(3) The normal institute has thus become a certainty in each county. The time of holding it being nearly the same each year, directors can arrange the terms of school so that teachers may be free to attend at that time. The county superintendent, being sure of his funds, can make his arrangements in time to secure the services of competent instruc . can give each teacher due notice of the time and place of meeting.

(4) In counties in which the superintendency is in any degree permanent the institute is coming to have a cumulative power. Each year adds something to its force in influencing, forming, and strengthening the character of the instruction given in the schools.

(5) In many counties the educational effect of the institute upon public opinion is very marked. It has had a tendency to bring the schools into closer relations with the people. School directors are recognizing its worth and require attendance upon it by the applicant as essential to securing a situation as teacher.

(6) The effect of a permanent annual institute upon the profession of teaching is no less marked. There is a growing disposition among our teachers to study and plan in order that their teaching may be both systematic and intelligent. Permanency of situation, or the average length of time which a teacher spends in one school, is increasing all over the State. This adds largely to the self respect of the profession and is directly traceable to the influence of the institutes. The system, however, has some defects which impair its usefulness. Among them are the following:

(1) Most of the institutes are held during July or August. In the ninety-nine institutes in the State there must be, probably, seventy-five different conductors.

Each institute also employs two or three persons who instruct in different branches. There are nearly three hundred persons in the State who work during the summer in our institutes. As there is no State course of study which is obligatory, there is a great diversity of instruction given, both as to quality and quantity. We have no definite standard towards which all work, no concert of action among our institute conductors.

(2) There is a tendency to give instruction which is too purely academic in its nature. This tendency is heightened by the custom of holding examinations for teachers' certificates at the close of the institute. The prospect of being able to pass this examination is held out by many county superintendents as an inducement to attend the institute.

(3) There is no system of inspection of the work done. The superintendent of public instruction visits as many of the institutes as possible, but only in the capacity of a lecturer. It is impossible for him to do more than that. As a consequence every institute is reported as the most successful ever held in the county. The healthy stimulus which comes from a careful, candid criticism is lost to us; yet it is the thing we most need in our institute work.

(4) The county superintendent has no power to compel attendance, even of teachers holding the lowest grade of certificate. He may withhold or refuse to grant a certificate, but it must be upon the ground of incompetence, not at all upon that of non-attendance. As a consequence superintendents resort at times to various means, such as prospective picnics, sociables, lectures, and even balls, in order to bring teachers to the institute.

(5) The law does not limit the attendance to those who are actual teachers or ready to become such.

Thus, in some counties high school pupils attend the same as they would attend an academy or a public school. The effect of this is to bring purely academic instruction too prominently forward and to render necessary a kind of discipline which ought not to be adopted in a teachers' institute.

(6) An inspection of the reports made in 1881 to the state department shows that the amount available for institutes was $50,956. Of this sum $32,486 was expended for instruction, $6,256 for incidentals, and $12,255 carried over as an unexpended balance. At the end of the institute year forty-one counties had over $100 left in the fund, while several carried more than $400 over for next year. The amount expended proportionally upon instruction and incidentals varies greatly in different counties. It is a great fault in our system that the law is not sufficiently explicit, definite, and guarded in respect to the disposition or use of the institute fund.

LETTER OF G. S. ALBEE, PRESIDENT OF STATE NORMAL SCHOOL, OSHKOSH, WIS.

In reply to your request for an opinion regarding the value of teachers' institutes as conducted in Wisconsin, I note the points in the order of your circular:

(1) As awakeners of popular interest in educational work our institutes have passed the pioneer stage. That work was done by enthusiastic lecturers, who dealt with general aspects of the public school question. By making each county the unit of association these institutes did much to aid in the transition to our system of county superintendency, and still are a factor in its stability.

To the spirit thus widely diffused we may justly ascribe a large influence exerted upon the legislation which set apart a munificent endowment of public lands for the support of normal schools.

With the organization of the first normal school there arose the feeling that institutes should also join in giving more formal instruction in the branches of school work; in brief, should become miniature training schools. This led frequently to an extension of the session to four and even six weeks and the assumption of the title "normal institute," more rarely spoken of as "county normal."

In 1872, three State normal schools having been organized (since followed by organization of a fourth), the board of regents of normal schools, in whose charge all professional training of teachers is placed by statute, decided to appoint a conductor of institutes in connection with each normal school. This officer conducts each year from ten to fourteen institutes of one or two weeks' duration.

The work of these experienced men is supplemented by employment of a corps of able instructors among the high school principals and county superintendents to conduct institutes during the month of August.

The benefits may be summarized thus:

(*a*) The teachers' institute is a local stimulus, waging perpetual war with the wretchedly low estimate placed by many communities upon the training needed by all teachers, even though it can plant but few high ideals.

(*b*) The transient service of the great body of teachers necessitates the employment of 2,000 totally inexperienced teachers in this State each year. These must not be permitted to enter the work without at least the flashing of a light along the line they should follow. The institute attempts the task.

(*c*) In the frequent shift of popular favor the tenure of a county superintendent is very brief and the succession has few lines of agreement in policy. The permanent tenure and professional ability of the regular conductors of institutes render them a valuable and most efficient aid in the school administration, acting through their annual visits and frequent correspondence with superintendents.

(*d*) The institute has been found one of the best mediums for presenting and rendering practically effective the views and purposes of the department of education. The State superintendent finds no other means so trusty as the work of the intelligent men whom he sends to the teachers, officers, and patrons of the remotest districts.

(*e*) This purpose has, during the last few years, largely modified the work of the institute; less and less attention is paid to imparting technical knowledge in branches and a large proportion of time is devoted to training teachers in school management and art of teaching, as suggested by a "graded course of instruction for county schools" recently adopted.

(2) The "mistakes that have been made" in conducting institutes have arisen from two extreme views, the one leading to an attempt to make them *schools* for instruction in specific branches, the other looking upon the assemblage as a mass meeting, requiring speeches upon anything labelled educational. When these views have contended in the breast of a single conductor or his advisors, the results have been mortifying, judged by any determinate tests.

The "evils that result" from the institutes, aside from the shallowness indicated in the above, inhere in the conditions sought to be remedied.

The mediocre scholar and utterly untrained candidate for the position of teacher is placed so nearly on a par with the better class, in a majority of cases, that the impulse is not spontaneous among teachers to lift themselves above popular demand.

Under these circumstances, superintendents feel called upon to lay great stress upon attendance upon institute, by exhortation, by circular, and even by special mention in teacher's certificate. All this impresses the youth with the idea that the institute is a professional Mecca, where miracles are wrought and absolution obtained annually. Hitherto those most intimately concerned in the organization of institutes have failed to realize the tendency to confirm the average teacher in low ideals a few degrees above stagnation. But the best conductors are ably striving to impress the truth that the institute is not competent to direct and develop professional growth, but is merely a stimulant, tending to quicken the powers and breed discontent with unworthy ideals.

But the day is far distant when youth entering the work for temporary purposes will care to realize that "regular attendance" upon institutes is but the *first* step in a worthy preparation.

(3) "How can these evils be remedied?"

(*a*) The best remedy is the persistent efforts of our trained and experienced conductors, who are regularly employed both in institutes and normal instruction and best understand the defective ideals of the material in their charge. The work is slow, but ten years' labor shows determinate progress, marked by the spirit of the students gathering at the normal schools.

(*b*) There should be a legal check upon the perpetual renewal of service from a person content with the lowest grade of certificate known to an overlenient law. The attainments demanded in a teacher must be made higher than the resources of an ordinary rural district school can furnish, else we shall present the humiliating spectacle of a perpetual breeding from a stock of low ideals.

(*c*) Every institute should be placed in charge of men thoroughly trained to professional work, who are also fitted by a broad experience in life to impress the young teacher with clear views of the character and extent of preparation he needs before assuming to become so large a factor in the destiny of a community as the teacher of its children cannot fail to be.

LETTER OF CHARLES H. ALLEN, PRINCIPAL OF STATE NORMAL SCHOOL, SAN JOSÉ, CAL.

(1) Teachers' institutes, as conducted in this State, are chiefly valuable (*a*) in disseminating better methods of instruction, particularly among teachers who have had no special training for their work; (*b*) in creating an esprit de corps in the profession, the tendency of which is to stimulate all teachers to do their best; (*c*) in wakening public interest in education and shaping public opinion to demand and to be satisfied with only good work; and (*d*) no little advantage is derived from the mere acquaintanceship formed among teachers at these gatherings.

(2) The evils which result are (*a*) that many times crude plans are suggested; some "hobby teacher" presents "*My*" method (with a big *M*), and inexperienced teachers are, by force of words, made to believe the plan is philosophical, and to adopt it, and, as a matter of course, they make a failure; (*b*) young teachers are sometimes discouraged and silenced by the severe criticisms of those who should advise and strengthen them; (*c*) and chiefly, unless under good conductorship, an institute is likely to degenerate into a debating school, or, worse, a *wrangle*, in which a few teachers seem to feel that they must, to show their own superior wisdom, assail every other person's plans. The work is thus monopolized by a few, and they not the ones best fitted to instruct or to benefit the majority of teachers. There are three plans in use

in this State: One is a "cut and dried" program, in which each hour is disposed of and little, if any, latitude given for the discussion of matters of interest that may arise unexpectedly; another plan is to have no program, but let topics for discussion be selected as circumstances seem to demand; third, in some cases a conductor is put in charge and the work is somewhat like the work of a normal school. The greatest mistake made is in not recognizing fully the difference between a teachers' association and a teachers' institute. The latter is a place for *instruction;* the former may be, and often is, a place in which to "show off."

(3) The remedies for these evils suggest themselves. There should in all cases be an institute conductor, a man qualified for his work in matter and method. During the day sessions at least, he should be almost the autocrat, filling somewhat the position of the "old schoolmaster." If he is wise, he will draw out those fitted to instruct and shut off, good naturedly, the bores. He will cut off all captious and useless discussion, and when no one is prepared to present the subject in a better manner will do it himself. The evenings may be used for association work, though there should be one or two popular educational lectures each session.

(4) The present system does not clearly define the work, and usage has made it very diverse. Perhaps a change in popular sentiment among teachers would be better than a change in the law. (*a*) There should be an institute conductor provided; (*b*) institutes should be divested of all machinery, and, instead of being managed by motions and votes, should, while doing institute work, be in charge of the leader; and (*c*) the work should be an exhibit of the philosophy of teaching, with enough of detail to make the philosophy clearly apparent and training enough to enable teachers to use it.

CHAPTER III.

STATISTICAL TABLES AND MEMORANDA RESPECTING TEACHERS' INSTITUTES.

STATISTICAL TABLES.

The following table shows to what extent teachers' institutes supported in accordance with the provisions of State laws or local regulations were held in 1882–'83 for the improvement of the teaching corps; the second table shows, in like manner, how county institutes were held during the same period; and the third, where and how institutes for teachers in cities were used for like purposes.

I.—*Table showing statistics of State and district institutes.*

States.	Number of State institutes.	Number of district institutes.	Length of session.	By whom held.	Amount appropriated by legislature.	Number of teachers in attendance.	Number of teachers in State.	Number of instructors.	Number of public lecturers.
Alabama *a*	4	....	....	State superintendent	....	....	....	....	....
Arkansas	....	12	3 days	Conductors appointed by State superintendent.	....	....	2,169	....	....
Florida	1	....	6 days	Under direction of State superintendent.	$1,000	....	1,095	....	....
Massachusetts	....	22	1 or 2 days	Conducted by secretary and agents of board of education.	1,760	1,941	8,861	18	46
Minnesota	....	41	1 week	Conductors appointed by State superintendent.	5,000	2,000	5,571	8	123
Nevada	....	3	12 days	....	300	....	176		....
New York	....	73	1 week	Conductors appointed by State superintendent.	16,040	13,231	30,826	*b*4	....
North Carolina	....	*c*10	(*d*)	do	8,000	1,446	5,002	58	70
Rhode Island	1	3	3 days	Conducted by State school commissioner.	500	12,231	1,287	58	70
South Carolina	*e*2	....	4 weeks	Conductors appointed by State superintendent.	1,500	500	3,249	13	4
Texas	....	42	6 weeks	Conductors appointed by State board of education.	5,880	....	4,361	....	....
West Virginia	....	7	5 days	Conductors appointed by State superintendent.	*f*630	....	4,287	14	14

a For colored teachers; expenses paid by the Peabody fund.
b For each.
c 5 for white and 5 for colored.
d 5 weeks for white teachers, and for colored teachers 1 for 9 months and 4 for 5 months.
e 1 for white and 1 for colored.
f Part of this amount was appropriated from Peabody fund.

II.—*Table showing statistics of county institutes.*

States.	Number of counties in State.	Number of counties in which institutes were held.	Aggregate number of county institutes.	How often held.	Length of session.	Total enrolment of teachers.	Average attendance of teachers.	Aggregate number of teachers in State.	Number of instructors.	Number of public lectures.	Total expense.	Do teachers make voluntary contributions?	By whom institutes were conducted.	Is attendance compulsory?	Penalty for non-attendance.	How expenses are provided for.
Alabama	....	....	122	....	....	....	....	....	....	....	....	....	Local school authorities.	....	None	....
California	51	48	48	Annually*a*	3 days	3,298	....	3,737	28	53	$3,548 00	No	County superintendent and principal of normal school.	Yes	None	Appropriation of an amount not to exceed $100 from county school fund and $1 license fee from each teacher.
Illinois	....	....	213	....	7½ days	6,657	....	....	....	....	6,080 00	$5,338	County superintendents and private instructors.	....	....	County appropriations and fees.
Indiana	92	91	92	Annually	5 days	12,232	....	13,578	....	236	4,485 00	Some cases	County superintendent.	No	None	County appropriation.
Iowa	99	99	99	Annually	2 to 5 weeks.	13,000	10,936	21,776	400	180	38,500 00	No	County superintendent and school principals.	No	None	Examination and enrolment fees of teachers.
Kansas	104	74	74	Annually	4 weeks	6,218	....	8,208	215	165	20,636 00	No	By persons licensed by the State board of education.	No	None	State gives $50 if fifty teachers are enrolled; license and enrolment fees of teachers.
Maryland	23	13	13	Annually *b*	5 days	....	....	3,180	....	....	....	....	By principal of State normal school and members of its faculty.	Yes	Loss of salary for time of institute.	Travelling expenses of instructors paid from normal school fund.
Michigan	77	68	68	Annually	1 week	5,566	3,710	14,472	40	136	8,545 57	No	Persons appointed by State superintendent of public instruction.	No	None	License fees, which may be supplemented by $60 from State treasury for each institute.

a Annually in counties having twenty or more districts; in smaller counties at discretion of county superintendent.
b Annually by law, but not in fact.

II.—*Table showing statistics of county institutes*—Continued.

States.	Number of counties in State.	Number of counties in which institutes were held.	Aggregate number of county institutes.	How often held.	Length of session.	Total enrolment of teachers.	Average attendance of teachers.	Aggregate number of teachers in State.	Number of instructors.	Number of public lectures.	Total expense.	Do teachers make voluntary contributions?	By whom institutes were conducted.	Is attendance compulsory?	Penalty for non-attendance.	How expenses are provided for.
Nebraska......	64	50	50	Annually.	2 weeks....	2,251	1,740	4,559	100	100	$4,720 00	No........	County superintendent.	Yes....	County superintendent may revoke licenses.	License fees, which may be supplemented by county aid and by tuition fees.
Nevada........	14	5	25	Monthly..	1 day	112	......	176	....	....	2,500 00	....	County superintendent.	No.....	None	....
New Jersey ...	21	14	14	Annually.	3 days......	3,406	3,235	3,486	28	28	2,800 00	....	Under direction of State superintendent.	Yes...	Optional with county superintendent.	State appropriation.
North Carolina.	94	40	a81	Annually.	10 days.....	2,058	......	5,002	...	....	2,252 00	Some cases	County superintendent.	Yes....	None	County boards may make appropriations.
Ohio	88	88	95	Annually.	5½ days.....	12,078	......	23,970	425	114	19,980 00	....	By an executive committee chosen by teachers of the county.	No.....	None	License fees of teachers.
Pennsylvania..	66	66	67	Annually.	5 days......	17,124	13,078	21,352	....	522	13,394 00	No........	County superintendent.	May be	Optional with board of directors.	County appropriation and enrolment fees.
Vermont	14	1	1	Annually*b*	3 days......	......	.....	4,419	....	....	....	....	State superintendent of public instruction.	No....	None	State appropriation.
Virginia	99	62	66	Annually.	3 days......	5,597	3,500	5,392	110	....	....	No........	County and city superintendents.	Yes....	$5 deducted from salary.	....
West Virginia.	54	54	65	Annually.	5 days......	4,699	3,269	4,287	65	30	1,400 00	Yes.......	Conductors appointed by State superintendent.	Yes....	Cannot teach.	Legislative appropriation.
Wisconsin	60	51	60	Annually.	1 to 3 weeks	3,882	2,940	9,919	28	53	6,432 00	....	State superintendent and normal school board.	No....	None	Normal school fund and State appropriation.

a 56 white and 25 colored.

b If requested by 25 teachers.

III.—*Tabular statement concerning city institutes.*

City.	How often.	How long held.	Penalty for non-attendance.	In section?	Number of teachers in city.	Number of such institutes during the year.	Average number attending.	How separated into grades.
Albany, N. Y	Monthly	One hour	None	Yes	237	9	50	Each grade meets in a section.
Allegheny, Pa	Every three months and otherwise on cause.		Loss of salary	Yes	215	16	200	In three sections.
Allentown, Pa	Semimonthly	Monday evening	None	Yes	60	36	60	Primaries in one section, all others in another.
Ann Arbor, Mich	Monthly		Loss of position	Yes	37	(*a*)	15	In three grades.
Atlanta, Ga	Every Saturday	Two hours						
Auburn, Me	Monthly	do	Loss of position	Yes	53	9	45	In grammar, primary, and rural grades.
Auburn, N. Y	do	Monday evening	do	Part of the time.	70	10	70	First three grades form one section, all other grades form one section each.
Augusta, Ga	Every Friday	One hour	Reported and reprimanded.	No	36			
Baltimore, Md	Monthly	Saturday, two hours	None	Yes	826	13	480	Each grade meets in a section.
Bangor, Me	do	do	do		80		80	
Belleville, Ill	do	Saturday, half day	Loss of salary	No	42	10	42	
Biddeford, Me	At call of superintendent.	Saturday	None	Yes	60			
Brookline, Mass	Monthly		do	Sometimes	39			Grammar in one section, primary in another.
Cohoes, N. Y	do	In evening for two hours.	do	No	55			
Charleston, S. C	Semimonthly	Saturday, from 10 to 2	do	Yes	100		25	First grade in section A and second grade in section B.
Chester, Pa	do	Saturday, three hours	Loss of salary	No	50	20	60	In classes according to length of certificate.
Chicago, Ill	Monthly	Saturday, two hours	None	Yes	1,087			By grades.
Chillicothe, Ohio	Call of superintendent		Loss of position		45			In three grades.
Cincinnati, Ohio	Semimonthly	Saturday morning	None	Yes	680			Principals in one section, first assistants in another, and primary teachers in another.
Columbus, Ga	Weekly							
Council Bluffs, Iowa	do	Saturday, two and one-half hours.	None	Yes	42	(*b*)	35	First four grades in one section and grammar grades in another section.

a Six for each section.

b Thirty for each section.

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I.—*Table showing statistics of State and district institutes.*

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Arkansas	....	12	3 days	Conductors appointed by State superintendent.	....	....	2,100	....	....
Florida	1	....	6 days	Under direction of State superintendent.	$1,000	....	1,005	....	....
Massachusetts	....	22	1 or 2 days	Conducted by secretary and agents of board of education.	1,700	1,941	8,861	18	46
Minnesota	....	41	1 week	Conductors appointed by State superintendent.	5,000	2,000	5,571	8	123
Nevada	....	3	12 days	....	300	....	178	....	....
New York	....	73	1 week	Conductors appointed by State superintendent.	16,040	13,231	30,826	84	....
North Carolina	....	*c*10	(*d*)	do	8,000	1,446	5,002	58	70
Rhode Island	1	3	3 days	Conducted by State school commissioner.	500	12,231	1,287	58	70
South Carolina	*e*2	....	4 weeks	Conductors appointed by State superintendent.	1,500	500	3,249	13	4
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II.—*Table showing statistics of county institutes.*

States.	Number of counties in State.	Number of counties in which institutes were held.	Aggregate number of county institutes.	How often held.	Length of session.	Total enrolment of teachers.	Average attendance of teachers.	Aggregate number of teachers in State.	Number of instructors.	Number of public lectures.	Total expense.	Do teachers make voluntary contributions?	By whom institutes were conducted.	Is attendance compulsory?	Penalty for non-attendance.	How expenses are provided for.
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States.	Number of counties in State.	Number of counties in which institutes were held.	Aggregate number of county institutes.	How often held.	Length of session.	Total enrolment of teachers.	Average attendance of teachers.	Aggregate number of teachers in State.	Number of instructors.	Number of public lectures.	Total expense.	Do teachers make voluntary contributions?	By whom institutes were conducted.	Is attendance compulsory?	Penalty for non-attendance.	How expenses are provided for.
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New Jersey	21	14	14	Annually	3 days	3,406	3,235	3,486	28	28	2,800 00		Under direction of State superintendent.	Yes	Optional with county superintendent.	State appropriation.
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Ohio	88	88	95	Annually	5½ days	12,078		23,970	425	114	19,980 00		By an executive committee chosen by teachers of the county.	No	None	License fees of teachers.
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West Virginia	54	54	65	Annually	5 days	4,699	3,269	4,287	65	30	1,400 00	Yes	Conductors appointed by State superintendent.	Yes	Cannot teach.	Legislative appropriation.
Wisconsin	60	51	60	Annually	1 to 3 weeks	3,882	2,940	9,919	28	53	6,432 00		State superintendent and normal school board.	No	None	Normal school fund and State appropriation.

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Allentown, Pa	Semimonthly	Monday evening	None	Yes	60	36	60	Primaries in one section, all others in another.
Ann Arbor, Mich	Monthly		Loss of position	Yes	37	(*a*)	15	In three grades.
Atlanta, Ga	Every Saturday	Two hours						
Auburn, Me	Monthly	do	Loss of position	Yes	53	9	45	In grammar, primary, and rural grades.
Auburn, N. Y	do	Monday evening	do	Part of the time.	70	10	70	First three grades form one section, all other grades form one section each.
Augusta, Ga	Every Friday	One hour	Reported and reprimanded.	No	36			
Baltimore, Md	Monthly	Saturday, two hours	None	Yes	826	13	480	Each grade meets in a section.
Bangor, Me	do	do	do		80		80	
Belleville, Ill	do	Saturday, half day	Loss of salary	No	42	10	42	
Biddeford, Me	At call of superintendent.	Saturday	None	Yes	60			
Brookline, Mass	Monthly		do	Sometimes	39			Grammar in one section, primary in another.
Cohoes, N. Y	do	In evening for two hours.	do	No	55			
Charleston, S. C	Semimonthly	Saturday, from 10 to 2	do	Yes	100		25	First grade in section A and second grade in section B.
Chester, Pa	do	Saturday, three hours	Loss of salary	No	50	20	60	In classes according to length of certificate.
Chicago, Ill	Monthly	Saturday, two hours	None	Yes	1,087			By grades.
Chillicothe, Ohio	Call of superintendent		Loss of position		45			In three grades.
Cincinnati, Ohio	Semimonthly	Saturday morning	None	Yes	680			Principals in one section, first assistants in another, and primary teachers in another.
Columbus, Ga	Weekly							
Council Bluffs, Iowa	do	Saturday, two and one-half hours.	None	Yes	42	(*b*)	35	First four grades in one section and grammar grades in another section.

a Six for each section.

b Thirty for each section.

III.—*Tabular statement concerning city institutes*—Continued.

City.	How often.	How long held.	Penalty for non-attendance.	In section?	Number of teachers in city.	Number of such institutes during the year.	Average number attending.	How separated into grades.
Dayton, Ohio	Quarterly		Absence reported to board.	Yes	130	3		As many sections as grades.
Decatur, Ill	Monthly	Saturday, three hours	Loss of position if continued.	No	32	8	32	
Detroit, Mich	Call of superintendent		Loss of standing.	Part of the time.	271			Irregularly grouped.
Dover, N. H	Monthly				42			
East Saginaw, Mich	Monthly	Three hours	None	Sometimes	73			First eight grades form one section each.
Elizabeth, N. J	do	7 to 9 p. m	Reprimand	No	52	10	45	
Elmira, N. Y	Six times a year	One half day	Loss of salary for time.		80			
Erie, Pa	Semimonthly		Salary deducted	Not often	115	20	105	Grade meetings frequently held by superintendents.
Elgin, Ill	Monthly	One and one-half hours	Loss of one half day's salary.	Sometimes	27	9	27	Primaries in one section and grammar and high in another section.
Flint, Mich	Call of superintendent	4 to 6 p. m	Censure	Generally	40			Four grades in each section.
Fort Wayne, Ind	Weekly			Yes	101			
Fond du Lac, Wis	Semimonthly	Monday evening	None	No	50			
Freeport, Ill	Monthly		Loss of position if continued.	Yes	32	9	30	Primary, intermediate, and grammar school teachers meet in three different sections.
Galesburg, Ill,	do	Friday, 3.30 to 5.30 p. m.	Deduction of salary	Occasionally	37	10	36	First three grades in first section, next three grades in second section, and next two grades in third section.
Grand Rapids, Mich	Call of superintendent		None	Yes				
Holyoke, Mass	Weekly		Loss of standing	Yes				Meet by buildings, three grades in a building.
Hamilton, Ohio	Monthly	Saturday, three hours	do	No	37	10		
Harrisburg, Pa	Semimonthly	Saturday, 9 to 12	Deduction of salary	Part of the time.	113	19	113	One grade in each section, except in high school.
Hornellsville, N. Y	Monthly	Two hours after school.	Probable loss of position.	Sometimes	90			Primary in one section, intermediate in second section, grammar in third section, and academic in fourth.
Hudson, N. Y	do	Tuesday, 7.30 to 9 p. m	Variable	No	22			
Indianapolis, Ind	do	One hour	Loss of one half day's pay.	Yes	200	8	250	Each grade forms a section.
Ithaca, N. Y	do	Saturday, 10 to 12	None	No	33	9	31	

Jacksonville, Fla	do	Saturday morning		No	29	.....	.....	
Janesville, Wis	Semimonthly	Saturday, 9 to 12 a. m	None	Occasionally	35	19	35	Primary and intermediate form different sections.
Jersey City, N. J	Monthly	4 to 6 p. m	do	No	332	.....	.....	
Kansas City, Mo	do	Saturday, 9 to 12	Deduction of salary	Yes	120	30	28	Two grades in each section.
Knoxville, Tenn	Semimonthly	Saturday, three hours	do	No	40	16	34	
Key West, Fla	Weekly		None	No	17	.....	.....	
La Crosse, Wis	Monthly	Saturday, two hours	Loss of pay, unless sick.	Part of the time.	50	.....	.....	Primary, intermediate, and grammar sections.
Lancaster, Pa	do		None	Yes	70	(*a*)	70	In four grades.
Lockport, N. Y	Occasionally		do	Sometimes	43	.....	.....	
Logansport, Ind	Monthly	Saturday, three hours	do		36	10	36	Teachers also meet in sections at other times.
Lynn, Mass	Monthly	Wednesday, one and one-half hours.	None	Yes	116	9	109	In five sections.
Macon, Ga	do	Two hours	Loss of position	Yes	35	30	.....	First four grades in first section and other grades in second section.
Madison, Ind	do	Saturday		Occasionally	34	8	33	In three sections.
Madison, Wis	do	Saturday, three hours		Yes	38	9	36	Primary and grammar in one section, high in another.
Marlborough, Mass	do	Saturday afternoon	None	Yes	.....	.....	.....	
Nashua, N. H	Call of superintendent		Loss of position	Sometimes	57	.....	.....	
Nashville, Tenn	Quarterly	Saturday, three hours in the afternoon.	Censured	Yes	110	4	110	First four grades in one section, the others in another.
Newark, N. J	Irregularly				45	.....	.....	Primary in one section, grammar in second section, and high school in third section.
New Britain, Conn	Monthly	One hour	None	No	42	.....	.....	
New Haven, Conn	Weekly	Wednesday, 4.15 to 5.30.	do	Yes	275	50	125	One grade in each section.
Newport, R. I	Call of superintendent	Two hours		Sometimes	45	.....	45	Each grade forms a section.
Newtonville, Mass	do			Sometimes	80	.....	.....	Irregularly grouped.
Norfolk, Va	Monthly	Three hours	None		30	9	28	
Norristown, Pa	do	Saturday, four hours	Loss of salary	Yes	44	20	42	Primaries in one section, all others in another.
Northampton, Mass	Call of superintendent	Two hours	None	Sometimes	59	3	60	Primary grades in one section, grammar grades in another.
North Weymouth, Mass	Bimonthly	One hour	Must attend	No	54	5	50	
Norwalk, Conn	Irregularly		None	Yes	42	.....	.....	Grouped by schools.
Orange, N. J	Monthly	One and one-half hours			32	.....	.....	
Oshkosh, Wis	Semimonthly		Loss of salary	Yes	58	.....	.....	Primary in one section, intermediate in another.
Ottumwa, Iowa	Monthly		None	Sometimes	30	.....	.....	First, second, and third grades in one section, all others in another.
Pittsfield, Mass	Call of superintendent	Two hours	None	Yes	65	.....	.....	Primaries in one section, intermediate in another, and grammar in another.
Portland, Me	Semimonthly	One hour in an afternoon and one and one-half hour in an evening each month.		Part of the time.	140	.....	.....	Afternoon meeting one grade in a section, evening meeting general.

a No fixed number.

III.—*Tabular statement concerning city institutes*—Continued.

City.	How often.	How long held.	Penalty for non-attendance.	In section?	Number of teachers in city.	Number of such institutes during the year.	Average number attending.	How separated into grades.
Portland, Oreg	Monthly	Two hours	$12 fine, $1 for tardiness.	No	65	10		
Portsmouth, Ohio	do				42			
Providence, R. I	Quarterly	One or two hours	Loss of position	No	307	3	307	
Quincy, Ill	Monthly	Three hours	Loss of salary	No	60			
Racine, Wis	Semimonthly	Saturday, three hours in the morning.	None	No	53	18	50	
Richmond, Va	do	Saturday, three hours	Excuses must be given	Yes	154		150	Primaries in one section, grammar in another.
Rochester, N. Y	Call of superintendent		Loss of position	Yes	288	15	260	One grade in each section.
Rome, N. Y	do		do	No	32			
Scranton, Pa	Semimonthly	Three hours	Loss of salary	Yes	193	20	188	Primary grades in one section, intermediate in another, all others in a third.
Steubenville, Ohio	Weekly	Friday, one and one-half hours.	None	Yes	44			First and second grades in one section, third and fourth in second section, fifth and sixth in third section.
Syracuse, N. Y	Monthly	Monday evening, 7 to 9.	Loss of salary	Part of time	187	10	150	First three years in one section, next two and a half years in second section, next two and a half years in third section, and high school in fourth section.
Tiffin, Ohio	Weekly	One hour	Loss of position	Sometimes	32			First, second, and third grades in one section; fourth, fifth, sixth, and seventh in second section; eighth, ninth, tenth, eleventh, and twelfth in third section.
Titusville, Pa	Semimonthly	Afternoon, 4 to 5		Yes	32			First primary grades in one section, second primary grades in another, intermediate in another.
Toledo, Ohio	Weekly		Loss of position	Sometimes				One grade in each section.
Utica, N. Y	Monthly			Occasionally	132			Primary grades in first section, grammar grades in second, and academic in third section.

Vincennes, Ind	do			Yes	20			
Wilkes-Barre, Pa	Semimonthly	Saturday, one hour in the afternoon.	Loss of salary	Sometimes	70	20	70	
Wilmington, Del	Call of superintendent.	do		Sometimes	180			
Winona, Minn	Semimonthly	Friday, three hours	At discretion of board of education.	Sometimes	41	40	40	First three years in one section, next four years in second section, next two years in third section, high school in fourth section.
Worcester, Mass	do		Loss of salary	Yes	225	15-20		First three grades in one section, next three grades in second section, and next three grades in third section.
York, Pa	Semimonthly	One half day	do	Yes	52	18	45	One grade in each section.

MEMORANDA CONCERNING TEACHERS' INSTITUTES IN STATES.

The foregoing Tables I and II show merely bare facts. What these facts mean in each case can be discovered only by considering them in connection with the condition of public sentiment, the provisions of State laws, the amount of money granted for the support of these institutes, and the use made of the amount. The following remarks and quotations are intended to afford some information respecting these subjects.

The alphabetical plan is followed here, as in the tables already given, and constant reference to the tables while reading the rest of this chapter will be found necessary.

The facts attending the establishment of teachers' institutes in Connecticut are so valuable that readers of this circular who are not already informed on the matter will derive much profit by reading, immediately after this paragraph, the historical notes printed under the name of the State, because the history in that State will throw much light upon many parts of the memoranda respecting other States.

ALABAMA.

The institute system of Alabama in 1882 was, in truth, but an experiment, but under the vigorous effort of the State superintendent the State is being rapidly organized for efficient work.

The following extract is from the State report for 1882:

> The teachers, realizing the advantages to be derived from the exercises and associations of institutes, have in most counties maintained their voluntary organizations; but it does not seem right or just that the paltry salaries paid to them should be taxed with this expense. If they are of public utility — and none will gainsay it — they should be organized by law and sustained by public funds. The normal schools, while doing a great and indispensable work, cannot supply the immediate and present demand for trained and efficient teachers. Much might be accomplished in improving many of the teachers now employed in our public schools by holding in each county in the State a teachers' institute, for each race, for one month, to be conducted by a thoroughly competent instructor employed by the State superintendent of education. For this purpose I would recommend the allowance of $100 of the fund apportioned to each county, to be deducted pro rata from the township funds of that race for whose benefit the institute is held. In other countries, and in most of our States, institutes are made a part of the general system of public instruction, and their value, in disseminating the best methods of instruction and discipline and inspiring a professional enthusiasm among the teachers, will readily suggest itself to any thinking mind. Though our present school law provides for the holding of institutes, it attaches no penalty to the failure or refusal of any teacher to attend. This should be remedied, as some county superintendents complain of the non-attendance of teachers at these institutes and the want of any definite power on their part to compel them to do so.

ARKANSAS.

The State superintendent of Arkansas wrote in 1883 as follows:

> The district institutes for the present year will continue in session two weeks. Institutes will be conducted by prominent educators, whose salaries will be paid from

the Peabody fund. Institute work in this State is doing great good in preparing teachers for their field of labor and in arousing and keeping up public sentiment in favor of public schools.

CALIFORNIA.

In California, teachers' institutes are held annually in counties having twenty or more school districts; in smaller counties, at the discretion of the county superintendent. Part of the expense is provided from the county school fund, of which a sum not to exceed $100 annually may be granted for this purpose. The other part of the expense is paid from the "institute fund," which is supported by a fee of $1 paid by each teacher who receives a certificate or license to teach. These institutes are conducted by the county superintendent and the principal of the State Normal School.

The State superintendent reports as follows:

> Institutes have proved highly beneficial to the school system of the State. Teachers have been regular in their attendance and earnest in their labors at the institutes. The attendance of teachers has gradually increased during several years past, the increased attendance of teachers between the years 1880 and 1882 being 1,712. The attendance of the general public has increased also, and their belief in the value of the institute system is more fixed.

It should be remembered that, while the State law requires all teachers to attend institutes in counties where they are opened, no penalty is mentioned for non-attendance.

COLORADO.

The State superintendent writes as follows:

> Owing to failure of the legislature to make any appropriation to meet the requirements of this law, its provisions concerning institutes are inoperative, and we have no system of institutes.
>
> We are yet so young and the supply of teachers immigrating here is so abundant that we are in less need of institutes than most States; yet I hope to see them established before many years. We have an excellent normal department at our State university.

CONNECTICUT.

The following historical sketch[1] is furnished by Hon. Charles D. Hine, secretary of the State board of education:

> In October, 1839, the first institute was held in Connecticut, in the city of Hartford. Hon. Henry Barnard, then secretary of the board of education, assembled twenty-six young men and formed them into a class. They were taught for six weeks by able lecturers and teachers and had the advantage of observation in the public schools of Hartford.
>
> In the spring of 1840 a similar arrangement was made for female teachers; but for a number of years there were no further meetings of this kind.
>
> In 1846 a convention of teachers was held, at which more than two hundred and fifty assembled. The exercises consisted of instruction and discussions and continued through five days.

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[1] The substance of this account will be found in the Nineteenth Report of the State Board of Education.

In 1847 sixteen meetings were held in different parts of the State, and more than twelve hundred teachers were gathered and instructed in the best methods of governing and organizing schools.

In 1848 Hon. Seth P. Beers, as superintendent, in his report to the assembly, said:

> More than three-fourths of all the persons employed to teach the public schools last winter, it is supposed, were assembled together for four or five days, during which time instruction was given by skilled and experienced teachers in the theory and practice of school keeping and the most approved methods of teaching in the various branches usually pursued in district schools. The regular exercises during the day were interspersed with discussions, in which the members of the convention took part. The good accomplished thus incidentally in the several places where the conventions were held, by awakening parental and public interest and disseminating sound views on important topics of school government and instruction and on the duties of parents to teachers and to the schools where their children attend, was worth all that the conventions cost the State; but the direct and anticipated result of the conventions—the bringing teachers from different towns in the same county into an acquaintance with each other and to a knowledge of each other's experience and methods; the presentation and exemplification by experienced teachers of the means and methods by which they have gained success; the breaking up in the minds of young and inexperienced teachers of radically wrong notions before they had been carried out into extensive practice, and thus distorted and dwarfed the minds of hundreds of the youths of the State; the impulse of self and professional improvement; the desire to read, converse, and observe on the subject of school education and teaching and to elevate the profession to which they belong—these results, which were predicted, have been realized as fully as the best friends of the measure promised. No single agency has so soon and so widely, with such success and general acceptance, been devised or applied to the improvement of common schools. The institutes or schools for teachers should be regarded a part of our system of common school instruction, and as such should be appointed, organized, supported, and supervised by those who are connected with the administration of the system and feel themselves responsible to the State.

From the report for 1848 it will appear that about one thousand teachers were in attendance at the different conventions, and that the course of instruction embraced a review of the studies taught in the district schools. It was the opinion of the superintendent that a smaller number of conventions should be thereafter held.

The law recognizing them as a part of the State system of education did not give them new impulse, but they continued with good attendance and large interest for several years. Their general features remained the same and the average attendance for ten years was about seven hundred.

The overshadowing events and intense excitement of the war diminished the interest. The numbers fell off, and were in 1864 so small that no report was made. There was probably less efficient and popular management until in 1866 a very low ebb was reached. With difficulty were teachers induced to attend, and to the report for that year the secretary says: "I am forced to conclude that an agency which, rightfully managed, may be among the most useful has suffered a serious decline. It certainly needs reorganization."

In the following year, under the direction of Hon. B. T. Northrop, there was more activity. A more popular cast was given and the attendance largely increased. Lecturers from abroad, eminent men at home, were employed, and a variety of topics presented. In 1868 the board of education directed that local institutes be held, intending by short meetings in many places to arouse local interest as well as educate teachers. For fifteen years these institutes or teachers' meetings, varying in length from one to five days, in numbers from six to two hundred and fifty, and differing quite as widely in their interest and usefulness, have been held in very many of the towns of the State. Since 1838 there have been three hundred and twelve of these institutes or teachers' meetings held in one hundred and twenty towns.

Legislation does not seem to have affected this part of the State educational system. Before institutes were recognized, under the direction of able and earnest men they were wonderfully successful and useful. Afterwards, when encouraged and fostered, they declined and almost died. In the subsequent years, with a large appropriation and under a somewhat different system — one of local management and impulse — they did not surpass their first success, and did not gain a strong and permanent hold either upon the teachers or school officers or those interested in education. To-day, in cities and larger towns, teachers' meetings, under the direction of superintendents and school visitors, furnish the "school" of the earlier time. In our country towns there is call, not for lectures or exhibitions, but for instruction in what has been proved and will improve the schools.

The successive legal enactments of the State of Connecticut relative to teachers' institutes may be summarized as follows:

In 1847, by resolution, the superintendent of common schools was authorized to employ four or more suitable persons to hold in each county two or more schools of teachers, between the 15th of September and 31st of October, for the purpose of instructing in the best modes of governing and teaching our common schools. The compensation of persons employed was fixed at $3 a day. A committee from each county was appointed to form a plan for schools of teachers and to report to the next legislature. These schools were declared to be for the benefit of those who were to teach in the public schools of the State.

In 1848 a similar resolution was passed, and the number of places was fixed at sixteen; and it was provided that the schools should not exceed one week each.

In 1849 an act was passed, in part as follows:

> SEC. 2. That the superintendent appointed by virtue hereof be, and he is hereby, authorized and directed to hold at one convenient place in each county of the State, in the month of September, October, or November, annually, schools or conventions of teachers, for the purpose of instructing in the best modes of governing and teaching our common schools, and to employ one suitable person to assist him at each of said schools.

In 1850 the superintendent of schools was directed to hold "at least one meeting of teachers, school officers, and parents in each school society, for an address and discussion on topics connected with the organization, administration, instruction, and discipline of our common schools." These were to be held in addition to the meetings already provided for by law. The expense was not to exceed $3 for each school society.

In 1854 the sum of $250 was appropriated to the use of the State Teachers' Association, and the superintendent of common schools was authorized to employ suitable teachers and lecturers to assist him in conducting the schools or conventions of teachers; he was allowed a sum not exceeding $100 for each school or convention.

In 1865 the board of education was constituted, and the secretary was directed to give notice of such meetings of teachers "as may voluntarily assemble."

In the revision of 1866 the secretary is authorized, in section 32, "to hold, at one convenient place in each county of the State, schools or conventions of teachers, for the purpose of instructing in the best modes of governing and teaching common schools; and, for the purpose of defraying the expenses of each school or convention so held, the said secretary may draw upon the comptroller for a sum not exceeding $120, to be paid from the civil list funds of the State."

At the May session of the legislature of the same year the above act was repealed and the following was substituted:

> SEC. 1. That the board of education are hereby authorized to hold, at one or more convenient places in the State, conventions of school officers, teachers, and other friends of public education, for the purpose of administering, governing, and teaching common schools; and, for the purpose of defraying the expenses of such conventions or schools, they are authorized to draw upon the comptroller for a sum not exceeding in total the sum heretofore allowed by law for this purpose, to be paid from the civil list fund of the State.

In 1868, by resolution, the legislature appropriated the sum of $3,000 annually for the schools or conventions of teachers.

In 1872 the law was changed so as to read as follows:

SEC. 19. The board may hold, at one or more convenient places in the State, con-

> ventions of school officers, teachers, and other friends of public education, for the purpose of instructing in the best modes of administering, governing, and teaching public schools; but the expenses incurred for such conventions shall not exceed in any one year $3,000.

The above clause was included in the act concerning the State board of education as constituted in that year.

In 1883 the law was still further changed, and now reads as follows:

> They [the board of education] shall seek to improve the methods and promote the efficiency of teaching therein by holding, at various convenient places in the State, meetings of teachers and school officers, for the purpose of instructing in the best modes of administering, governing, and teaching public schools, and by such other means as it shall deem appropriate; but the expenses incurred in such meetings shall not exceed the sum of $3,000 in any year.

FLORIDA.

No institutes were provided for in Florida previous to the passage of the law of February, 1883. No steps have yet been taken under the law to hold the institutes. It is the purpose of the State superintendent to hold institutes in as many of the counties as practicable during the ensuing scholastic year. The law appropriates $1,000 for 1883 and $1,000 for 1884. The manner of holding the institutes is left with the State superintendent.

ILLINOIS.

The institute system of Illinois is chiefly voluntary. The tabular statistics refer to the year ending June 30, 1882.

The following is an extract from the report of the State superintendent of public instruction for the year 1880:

> I find by consulting the biennial school reports of this State from 1868 to 1878, inclusive, a period of eleven years, that the average number of counties in which institutes have been held is, for each of these years, less than 75, institutes having been held in 45 counties in 1868 and 97 in 1877. The average length of time each institute was in session in 1868 was 2.8 days, and in 1877 5.4 days; the average being for these eleven years 4.4 days.
>
> In 1869 the number of teachers employed in the public schools of the State was 19,444, and the number enrolled in the institutes that year was 4,651, less than 25 per cent. of the number of teachers; but in 1877 there were employed 21,993 teachers in the public schools and the number of members enrolled in the institutes was 8,010.
>
> For these eleven years the average number of institutes held in the State was 216, with an average attendance of 6,756 members; being an average of 31 for each institute, or less than one-third of the average number of teachers employed each of these years in the public schools.
>
> The report for the past year, ending July 1, 1880, shows 225 teachers' institutes held by county superintendents and 147 by other persons, or 372 in all, and that they were in session 1,865 days, an average of 5 days each, with a total enrolment of 8,424, being 38 per cent. of the number teaching in the schools the same year, or an average enrolment of 22 for each institute. These figures and those of the preceding eleven years (I omit those for the fractional year ending July 1, 1879) show that between 24 and 38 per cent. only of the teachers employed in the public schools of the State attended any of the institutes held each year in about three-fourths of the counties of the State.
>
> In most of the counties in which well conducted institutes have been held (i.e., institutes for which intelligent preparation had been made and good instructors secured), a large portion of the teachers have been present, and the influence of the

institutes upon those present has been most excellent, the teachers themselves being the judges; in other counties, in which such preparation had not been made beforehand, the results were not so satisfactory; as a whole, however, the institute work of the State has been creditable. These meetings have done much to awaken an interest on the part of teachers in their work and to quicken in them a desire to qualify themselves to do better work, and they have also done much in the localities in which they have been held, to awaken in the minds of the people a new interest, that has led to a juster appreciation on their part of the character of the teacher's labors.

While more satisfactory results in many counties ought to have been obtained, and might have been with wiser and more judicious supervision, the voluntary attendance and earnest work of so many teachers during a considerable portion of their vacation are very encouraging indications, showing, as they do, that a goodly number of teachers are willing to make sacrifices of both time and money if thereby they can better fit themselves for the proper discharge of their duties.

But when it is remembered that Kansas, with 1 State normal school, has enrolled in the county normal institutes, for four weeks, 60 per cent. of the teachers employed in the public schools; Pennsylvania, with 10 State normal schools, has enrolled in institutes, continuing one week each, 60 per cent.; Indiana, with 1 State normal school, over 90 per cent.; and New York, with 8 prosperous normal schools, between 65 and 80 per cent. each year, the results in our State are anything but flattering.

From special reports received I learn that the expenses of these institutes, amounting to more than $10,000 in a single year, are borne by the members in attendance, excepting the small sums appropriated in a few instances by county boards, amounting in all the past year to $673.

The number of institutes and the number of members attending them the past year indicate, so far as mere figures can, a small increase in the amount of institute work over that reported in former years.

From what I have seen and learned of institutes I am convinced that their efficiency and influence for good upon the people and upon the teachers, and through them upon the schools, depend very largely upon the intelligence shown by the county superintendent in planning the work and in adapting it to the needs of the teachers, the best arranged, best conducted, and most largely attended, in proportion to the number of teachers employed, being almost invariably found in the counties in which there is the best supervision.

In short, I believe it to be true, as another has said, that "the institute of a county is a fair index of its educational rank."

In many counties having the best institutes I find that the average number of members in attendance for one or more weeks has been nearly equal to the number of teachers employed in the schools, and in several counties the number enrolled in the county institute of one or more weeks' duration has been considerably larger than the number of teachers required to supply all the schools thereof.

But, while all this is true and deserving of honorable mention, it should not be forgotten that, in the majority of the counties of the State whose teachers are most in need of the benefits to be derived from institutes, but few of them know anything of the practical lessons to be learned in them.

By further examining the statistics I have made this discovery: That in 25 counties, in which 7,603 teachers are employed, there were enrolled in the county institutes thereof the past summer 4,904 teachers, or 64 per cent. of the whole number, while in the remaining 77 counties, in which 14,652 teachers are employed, but 3,500, or less than 24 per cent., attended any institute.

In other words, in 77 counties of the State (more than three-fourths of the whole number) at least 76 teachers out of every 100 did not attend any institute, and consequently did not receive any benefit or aid therefrom.

These, in brief, are the facts concerning the institute work in Illinois.

After speaking at some length of the defects of the Illinois schools, the superintendent said:

The remedy is, it seems to me, as I have already said in another place, a system of thorough county supervision, and in connection therewith and in addition thereto a system of well conducted teachers' institutes, that shall reach the thousands who, without any special preparation, now enter the schools each year as teachers.

In fact, I can think of no more feasible plan for helping such teachers to learn and adopt correct methods of doing school work and for interesting the people in the schools than that of holding such institutes annually in each county in the State.

With some legislation to aid in securing a system of institutes that shall reach every county in the State and secure the attendance of the teachers, most of those who now know practically nothing of improved methods of teaching and of the benefits to be derived from these gatherings would be reached and helped.

In short, the good results reached in a portion of the counties that have been favored with good county supervision and have for years had the influence of such institutes would be extended to all the counties of the State, and there would, as a consequence, be a demand for better teachers that it would be difficult to supply.

INDIANA.

The following is from the report of the State superintendent of Indiana:[1]

County institutes.—The law requires the various county superintendents to hold an institute in their respective counties, once at least each year, for the instruction of the teachers therein. These institutes generally remain in session five days. Instruction is given in the various branches required by law.

This is supplemented by lectures and discussions upon various educational topics. Although attendance is voluntary, over twelve thousand teachers and persons preparing to become such were enrolled in them last year. This is evidence that the teachers themselves appreciate their value. Since I have been in office I have attended about fifty institutes, and in nearly every case I found the teachers present in large numbers, and, as a rule, they were attentive to their business. No one visiting these meetings could doubt for a moment that our teachers are earnestly endeavoring to make themselves more competent for their important work. The county institute system has been one of the most important agencies in bringing the schools up to their present standard.

It should therefore receive the earnest support of the legislature and should be improved and perfected. If institute work could be thoroughly systematized, if the time for holding institutes in the various counties could be so arranged that three or four thoroughly competent institute workers could pass from county to county and thus find employment for five or six months in the year, if some means could be devised whereby a larger fund could be raised in each county for the purpose of paying for the services of these workers, the result would be to place our country schools upon a plane much higher than that upon which they now stand. In some of our more advanced counties the teachers supplement the fifty dollars paid by the county for the support of the institute by voluntary contributions sufficient to employ the best normal instructors we have. It would be wise to legalize this contribution and to make the amount paid by the county dependent upon the amount contributed by the teachers. For example, the law might be so amended that the county superintendent would be authorized to levy a small fee, not to exceed fifty cents, from the teachers attending the institute. If the county, then, were required to appropriate a sum equal to the amount collected from the teachers, provided the appropriation should not exceed one hundred dollars in any one year, the burden of the expense of the institute would be divided, and a sufficient amount would be raised to defray all necessary expenses. At the last meeting of county superintendents, held in Indianapolis, in May, 1876, a committee was appointed for the purpose of devising some means for unifying and systematizing the work in the county institutes.

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[1] The extracts here presented from Indiana reports were published by Mr. Smart when he was State superintendent.

The committee has matured a plan for the accomplishment of this result, and will report it to the superintendents at their next meeting. It embraces the following points: (1) The employment of a head institute worker, who shall spend his entire time in the field. (2) The selection of a corps of instructors, who shall meet in the department of public instruction in July for the purpose of organizing the institute campaign of the year. (3) The systematic arrangement of the time of holding the various institutes, in order that the instructors may reach as many counties as possible. If this plan is adopted by the superintendents, it can be put into successful operation without further legislation.

The following is from a later report:

One of the most striking evidences of the improvement in the work done in our school rooms during the past few years is found in the remarkable increase in the attendance upon the institutes and in the improvement in the character of the work done in them. The teachers of the State should have great credit for making persistent effort to improve themselves in their profession.

The act of 1865, authorizing the payment of money from the county treasury in support of county institutes, is as follows:

SEC. 159. In order to the encouragement of "teachers' institutes," the several county auditors of the several counties of this State shall, whenever the county school examiner (county superintendent) of their county shall file, with said auditor, his official statement, showing that there has been held, for five days, a teachers' institute, in said county, with an average attendance of twenty-five teachers, or of persons preparing to become such, draw his warrant in favor of said school examiner (county superintendent) on the county treasurer, for thirty-five dollars, and in case there should be an average attendance of forty teachers, or persons preparing to become such, then the said county auditor shall draw his warrant on the treasurer for fifty dollars, for the purpose of defraying the expenses of said institute: *Provided, however*, That but one of said payments be made in the same year.

The act is still in force, and the greatest amount that can be drawn for the support of a county institute, in any county, in one year, is $50. When this act was passed the number in attendance at the various institutes was small, being in 1866 an average of but thirty-eight to a county. In 1878 the average attendance at county institutes was one hundred and thirty-five. By the act referred to, $35 were appropriated to an institute with an average attendance of twenty-five teachers and $50 to an institute with an average attendance of forty teachers, it being recognized as a fact that it costs more to provide for and instruct thirty-five teachers than it does to provide for and instruct twenty-five teachers.

Sixty-seven of our counties enrolled last year over one hundred teachers each, fourteen of which enrolled over two hundred each. It can readily be seen that an amount of money sufficient to pay for the instruction of forty teachers is not sufficient to pay for the instruction of two or three hundred teachers. An institute that will do any good cannot be maintained without expense. We cannot afford to give the teachers poor instruction; they must have the best. The amount of money now appropriated by law is inadequate to the necessities of the case. * * *

I suggest a method by which the amount of money for institutes can be increased without expense to the State. The public examinations are conducted without expense to the teachers. If the free examination system is continued the number of applicants will be multiplied in the future and the consequent expense to the State will be increased.

Two good results can be secured by so amending the law as to require applicants for teacher's license to pay 50 cents for their examination: the requirement of a fee would deter many persons who now apply from making application; the expense of the examinations would thus be reduced and a fund would be created from the fee charged from which competent instructors at the teachers' institutes could be paid. I believe an almost unanimous vote of the teachers of the State would be given in favor of license fees if the proceeds of the fees were to be used for their benefit, as suggested.

Township institutes.—The school law provides that "at least one Saturday in each month during which the public schools may be in progress shall be devoted to township institutes or model schools for the improvement of teachers, and two Saturdays may be appropriated, at the discretion of the township trustee of any township; such institute shall be presided over by a teacher or other person designated by the trustee of the township. The township trustee shall specify in a written contract with each teacher that such teacher shall attend the full session of each institute contemplated herein or forfeit one day's wages for every day's absence therefrom, unless such absence shall be occasioned by sickness."

More than four thousand of these institutes have been held during the year. They have been largely attended and have undoubtedly produced good results. They are rapidly growing in favor and they are proving to be an important agency in the advancement of the country schools.

After a consultation with the school officers of the State I am satisfied that township institutes would do better work if they were placed exclusively under the control of the county superintendent and were called together less frequently. If the superintendent were empowered to combine townships and hold district institutes and if he were empowered to hold the institutes less frequently, much more efficient work would be done in them and much less complaint in regard to them would be made by the teachers.

IOWA.

The State superintendent writes as follows:

Teachers express themselves as well pleased with the workings of the institute as now conducted, and nearly all of them avail themselves of the opportunities afforded to receive its benefits.

We formerly had the weekly system of institutes. The law compelled teachers to attend and paid those whose schools would otherwise be in session.

It was found that the old plan of holding institutes for a few days was unsatisfactory. A few enterprising county superintendents began to hold longer conventions, and the result was such as to cause the legislature to provide for the present system of normals throughout the State. (Chapter 57, laws of fifteenth general assembly, amended section 1769 of the code.)

Our normal institutes are well attended. The interest is constantly on the increase and they are giving general satisfaction. Fully 80 per cent. of all our teachers attend. They are held in July, August, and September, and a few in March. The fact that the majority are held in August renders it impossible for young men to attend from the country districts, as they are engaged in harvesting. There is some agitation in favor of winter normals, to be held during the first four weeks after holidays, the schools to be closed by law during that time.

KANSAS.

The following extract from the report of a county superintendent is presented as exhibiting the beneficial results of a change in the way of conducting these institutes in Kansas, where the county has been substituted for the judicial district as the geographical base of the institute management:

Our present institute law went into operation in 1877. Previous to that time the State superintendent was required to hold an institute in each judicial district. Under that system an institute generally lasted three or four days. The exercises consisted mainly of talks or lectures to the teachers. Under the present system the institute continues in session not less than four weeks and is carried on in all respects like a school. The results have been highly satisfactory. Since the adoption of the law I can see a great improvement in the schools of this county. The discipline is much better and methods of instruction are greatly improved. Owing to the fact that the schools of the county are in session during the winter, the institute is compelled to meet in the hot season. This is in some respects a disadvantage, as studying is more difficult in sultry weather; but I cannot see how it can be avoided.

No changes have been made in the law since its adoption.

The number of school districts in this county is 82. The average attendance at our institutes is about 85.

LOUISIANA.

The State superintendent of Louisiana informed the compiler that this State had not made any provision for institute work of any kind prior to 1884. He hoped, by the assistance of Dr. Curry, general agent of the Peabody fund, to introduce the system in a few months by holding a number of short institutes in various parts of the State, each of two or three days' duration, hoping to interest the legislators in the subject and thus obtain a grant for the further expansion and application of the institute as an inspiring element.[1]

MARYLAND.

The following account of the county institute system of Maryland was prepared for this publication by Hon. M. A. Newell, State superintendent and principal of the State Normal School:

When our first public school system for the State was organized in 1865, the theory for institutes was as follows: The State Normal School was to be open six months in the year and the principal and professors were to spend four months in conducting teachers' institutes. In 1868 the law was changed so as to keep the normal school open nine months in the year. This left but one month for institutes, the month of June, when one-half the schools are closed and the teachers scattered. The principal of the State Normal School, however, endeavored to keep up the institute system, though it was plainly impossible for him to give up to the institutes twenty-three out of the thirty-eight weeks when the normal school was in session. On an average there has been an institute held in each county every two years. Much of the responsibility for institute work is now thrown on the county examiner, but this officer is not always an efficient institute worker.

To put the institute system into the best condition for efficient service, the staff of the State Normal School should be increased. An addition of two male professors ($3,000) would be sufficient. I am quite convinced that the normal faculty will make the best and most practical institute workers. I have no faith in itinerant lecturers. The nearer the institute is brought to the level of the practical normal school the better it will be.

For purposes of stimulation, the institute of a week is sufficient; but for instruction and edification, we need one of a month in duration. An institute lasting the whole month of July, held in some pleasant country town, would, I think, be well attended and would produce good results. The working ought to be nearly the same as that of a permanent normal school. My experience with such institutes in Virginia, North

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[1] There seems, however, to have been no substantial change in this matter since this statement was made.

Carolina, and South Carolina enables me to speak very positively with regard to their efficiency.

In Maryland the institute is not appreciated outside of a very limited circle. In 1872 the obligatory feature was removed. It was restored in 1874; but most of the parents still look on it as a week lost to their children. Most commonly, however, the institute is popular in the town where it is held.

If I had my own way and had about $2,000 a year for expenses, I would dispense with the weekly institute and hold two, for a month each, in different parts of the State, and pay a part of the teachers' expenses to induce them to attend.

MASSACHUSETTS.

The following information was furnished by Prof. George A. Walton, State agent of the Massachusetts board of education:

The policy of employing the agents of the board and teachers of the normal schools, whose salaries were paid from another appropriation, made the smaller sum ($2,000) ample to carry on the institutes.

The time of holding has been continually shortening, partly on account of the better preparation of the teachers and partly from the difficulty of providing entertainment, which has depended upon local hospitality.

The system could be made more efficient if the teaching, which is oral and largely by lecturing, could be supplemented by having the institute members reproduce the teaching. The shortness of the time precludes this exhibition of the teaching by the members.

MICHIGAN.

This State holds State institutes biennially, lasting one week. The last was held in 1883. The county institutes are held annually and are usually of a week's duration.

The following sketch concerning institutes in Michigan is taken from Historical Sketches of Education in Michigan, by W. L. Smith, deputy superintendent of public instruction:

The first reference to teachers' institutes as a distinct means of increasing the usefulness of the public schools which we are able to find in the annual reports of the several superintendents of public instruction was made by Superintendent Mayhew, in his report for 1845. While normal schools were considered as indispensable to the perfection of the school system, yet the fact was recognized that many teachers would be unable to attend such institutions, and in consequence it was deemed that teachers' institutes might be organized in each county and made accessible to every teacher, thereby accomplishing a great amount of good. "Teachers' institutes," said Mr. Mayhew, "are teachers' associations with protracted sessions. Where teachers' institutes have been established, the teachers of a county usually spend almost two weeks in session, fall and spring, with a competent principal and experienced board of instruction, employed by a committee provided for that purpose. The several branches of study ordinarily pursued in our common schools are reviewed, the different methods of instruction and modes of government are discussed, and plans are laid for concert of action. Lectures are generally delivered before these institutes by professional gentlemen and others, who, from their devotion to the great work of popular education, might appropriately be denominated common school missionaries. * * * Would it not be well to encourage their establishment in this State by legislation? I entertain the opinion that, if the State has $25,000 to appropriate annually to the promotion of common school education, it would be productive of greater good to apply $1,000 or $2,000, or even $5,000, to assist in defraying the necessary expense of maintaining teachers' institutes in the different counties, and the residue to the support of schools, than to apply the whole to the payment of unqualified teachers or even for those of ordinary attainments."

In his report for 1846, Superintendent Mayhew again called attention to the importance of teachers' institutes, and stated that the first institute organized in the State had been held during October of that year in the village of Jackson, under the auspices of the Jackson County Teachers' Association, at which about thirty teachers had attended. In 1847, Mr. Mayhew reports the awakening of a general interest on the subject and states that "not less than a dozen" institutes had been held. Of these Jackson County had enjoyed the benefits afforded by three; Washtenaw County, two; Allegan County, two; while the various locations of the others are not given. In speaking of one held in Allegan County, he said: "It was my fortune to be in attendance the first two days of its sittings. The enlightened policy pursued by the friends of education in that county and the zeal they manifest are above praise. Rarely have I been so highly gratified as at my first visit to Gun Plains, where the institute was held. As I came in sight of the school-house, I saw an ox team drive up and stop. Several females got out of the wagon and went into the house. It occurred to me they might be young ladies who had come up to attend the sittings of the institute. On inquiry, I ascertained that this was a fact, and that they had come for this purpose, in a lumber wagon drawn by oxen, about forty miles."

During the year 1848 several institutes were held, but how many or where is not now a matter of record that we have been able to find. In the report for this year Superintendent Mayhew again brought the subject to the attention of the legislature and urged the importance of the State's providing for the expense of holding at least three or four teachers' institutes annually "in different parts of the State, as might best accommodate the *whole State*." "To render these institutes more advantageous," said Mr. Mayhew, "and to give them unity and efficiency, I think the superintendent of public instruction should be authorized to associate with himself two or three persons of ability and experience—persons of his own selection—and attend the institutes of a single season, in regular succession, devoting six or eight weeks to them all."

From an intimation made by Superintendent Shearman in his report for 1849, it is to be presumed that several institutes were held during that year, but further than this we have been unable to gather any information.

During the years 1850, 1851, and 1852 institutes were held at various places in the State, at several of which resolutions were passed asking the legislature to make appropriations for their support, while Superintendent Shearman repeatedly urged their importance as an acknowledged efficient means of improvement among teachers. During the month of October of the latter year, a State teachers' institute was held in the new normal school building at Ypsilanti, under the auspices of the State board of education, and immediately following the exercises of the formal opening of the State Normal School. This institute was attended for three weeks by over two hundred and fifty teachers of the State, and was under the immediate direction of Prof. A. S. Welch, principal of the Normal School, assisted by several instructors of the school and professors of the university.

This institute was a means of awakening a more general interest in institutes than had formerly been manifested, and as a consequence the legislature of 1855, in order to meet, in part, the demand for more efficient teachers, as well as to diffuse among teachers themselves, and through the community at large, a more just appreciation of the dignity and importance of the vocation of teaching, passed an act to provide for the holding of teachers' institutes. By the provisions of this act, the superintendent of public instruction was authorized to hold institutes whenever reasonable assurance should be given that a number not less than fifty or in counties containing less than 12,000 inhabitants not less than twenty-five teachers of common schools should desire to assemble for the purpose of forming an institute, which should remain in session not less than ten working days. For the support of these institutes the superintendent was also authorized to draw from the State treasury an amount not to exceed $200 for each institute and not more than $1,800 in any one year. This law, while not all that was desired, was an advance in legislation that gave great encouragement to the friends of education throughout the State. Immediately following the passage of this enactment, Superintendent Mayhew made arrangements for holding a series of institutes, and since that time, with the exception of the year 1858, a greater or less number of institutes have been held each year under the direction of State authority.

In 1861 an amendatory act to the law of 1855 was passed which reduced the time for which an institute was required to be held from ten days to five days and made the limit of aid which might be given by the State to each institute $100 instead of $200, while the total amount that could be drawn from the State treasury in any one year remained $1,800 as before. The design of this was to increase the number of institutes that might be held in any one year, although the time during which they were to remain in session was reduced.

This law continued in force until the session of the legislature in 1877, when, mainly through the efforts of Superintendent Tarbell, it was repealed and a new law enacted in its stead. The provisions of this enactment are such that all examining boards and officers are required to collect from each male teacher receiving a certificate a fee of one dollar and from each female teacher a fee of fifty cents. These fees are to be paid quarterly into the county treasury and set apart as a fund for the support of teachers' institutes. In addition to the fund thus derived the superintendent of public instruction may draw from the State treasury for the support of institutes in counties where the local fund is not sufficient to meet the necessary expenses thereof an amount not exceeding $60 for each institute of five days' duration. The superintendent of public instruction is also authorized to hold once in each year an institute for the State at large, which is denominated a State institute, and for the purpose of meeting the expenses of such an institute he may draw on the State treasury for an amount not exceeding $400. The limit of aid which the State may give to institutes in any one year is fixed at $1,800.

Under the provisions of this act a new life has been infused into the institute system of the State. A large proportion of the counties now have an institute fund sufficiently ample to meet all the expenses of a good institute, while in the newer counties, in which the fund is less, the State steps in to aid, and thus all portions of the Commonwealth are enabled to enjoy the advantages afforded by these gatherings.

The first State institute provided for by this law was held at Lansing during the week beginning August 20, 1877, under the direction of Superintendent Tarbell. This institute was designed to be in some respects a model institute to afford thought and method for the county institutes to follow. Though it felt the disadvantages which attend the first attempt at an untried scheme, it was pronounced by all a valuable success. About two hundred persons were in attendance from various parts of the State, comprising very nearly all the leading teachers. The corps of instructors at this institute was composed of Hon. John Hancock, superintendent of the schools of Dayton, Ohio; Dr. E. C. Hewitt, president of the Illinois Normal University; Prof. Robert Graham, of the Oshkosh Normal School and State institute conductor for Wisconsin, and Prof. Jonathan Piper, of Chicago, who had been for several years engaged in institute work in Iowa. The aim in selecting these men was to secure the best workers in four of the neighboring Western States, who should bring, for use in the institutes to be held in Michigan, the ripest thoughts and best methods in this important field of work. These men justified the expectations which their reputations had raised and were the occasion of improved work in the county institutes which followed.

The second State institute was held at Lansing during the week commencing July 8, 1878. In issuing the call for this institute, Superintendent Tarbell said: "It has a double object: first, for the convenience and instruction of teachers in the public schools of the State, who can avail themselves of the advantages of an institute at this season of the year; and, second, to bring together for mutual improvement those who are to do institute work in the State during the summer and fall. It is intended, so far as practicable, to make this institute the model on which the institutes of the coming season shall be formed. Michigan men only will be employed to give instruction, and, so far as feasible, only those who are expected to work in other institutes. Seventeen men, well known in the institute field, are engaged to give instruction, each one of whom will show how institute work upon the particular topics assigned to him should be done." This institute enrolled one hundred and thirty-six of the best teachers in the State, and was especially valuable to the instructors, who thereby had an opportunity of comparing views as to the best methods of presenting the different topics usually considered in county institutes. Each afternoon, after the regular session, the instructors met with the superintendent of public instruction and discussed, in an informal manner, the work of the day. Committees were appointed to prepare outlines on each of the different topics considered, and these were printed for use of instructors in county institutes.

The third State institute was held at Lansing, July 9, 10, and 11, 1879, under the direction of Superintendent Gower. At this institute a number of the most experienced and successful institute workers of the State presented outlines upon the different topics usually considered at our county institutes. Each instructor was requested to give his reasons for the matter and arrangement of his outline, with suggestions as to the best way of presenting the different points to an institute. In addition to the discussion of each outline as it was under consideration by the institute, the instructors were requested to note any points wherein their own views differed from those expressed by the gentlemen presenting the various topics. These outlines were then revised by a committee and afterward published in the form of a manual for use at the county institutes during the succeeding two years, and thus a uniform basis of work was established which has since rendered the the instruction of far more value than could have been secured in any other way.

The fourth State institute was held at Lansing July 5–8, 1881. Upon that occasion a number of prominent instructors of Michigan presented outlines of work suitable for the institutes of the coming two years. They were requested to make free use of anything contained in the manual published two years before, which seemed to have stood the test of experience and use, and also as freely to reject or alter any and all matter which to them seemed objectionable or to demand change. Each syllabus received frank and full criticism from all present, and ample notes and suggestions were left with this department to aid in preparing for publication such a manual as it was thought would best subserve the purpose for which it was designed.

The following table has been prepared in order to exhibit the number of institutes held each year since the first act providing for their support was passed, the number enrolled in attendance, and the amount of funds drawn from the State treasury and the several county treasuries for meeting expenses incurred:

Year.	No. of institutes.	No. enrolled in attendance.	Amount of funds disbursed.		
			State.	County.	Total.
1855	6	588	$1,200 00	....	$1,200 00
1856	9	913	1,800 00	....	1,800 00
1857	9	....	1,800 00	....	1,800 00
1858	0	....	1,200 00	....	1,200 00
1859	10	1,242	1,590 00	....	1,590 00
1860	8	1,251	1,300 00	....	1,300 00
1861	8	1,041	740 00	....	740 00
1862	13	1,850	1,385 00	....	1,385 00
1863	11	1,500	1,100 00	....	[illegible]
1864	13	1,209	1,300 00	....	[illegible]
1865	8	....	900 00	....	[illegible]
1866	11	902	1,100 00	....	[illegible]

Year.	No. of institutes.	No. enrolled in attendance.	Amount of funds disbursed.		
			State.	County.	Total.
1867	10	....	$1,100 00	....	$1,100 00
1868	7	....	1,400 00	....	1,400 00
1869	18	1,833	1,800 00	....	1,800 00
1870	16	2,005	1,800 00	....	1,800 00
1871	16	1,432	1,500 00	....	1,500 00
1872	17	1,275	1,800 00	....	1,800 00
1873	7	705	700 00	....	700 00
1874	13	890	1,300 00	....	1,300 00
1875	1	37	....	....	....
1876	8	599	900 00	....	900 00
1877	20	781	1,503 73	$441 90	1,945 63
1878	46	2,862	1,545 00	3,902 83	5,447 83
1879	57	4,144	1,748 46	5,313 03	7,061 49
1880	65	4,482	1,800 00	6,667 49	8,467 49
1881	55	4,548	1,784 95	5,933 22	7,718 17
1882	68	5,566	1,800 00	6,745 57	8,545 57
Totals	530	41,655	37,897 14	29,004 04	66,901 18

MINNESOTA.

The district institutes of Minnesota seem to do their work satisfactorily. The State has for several years appropriated the sum of $3,000 annually for institutes, to be expended under direction of the State superintendent of public instruction. The legislature last winter increased the annual appropriation to $5,000.

NEBRASKA.

The following facts are drawn from a special communication upon the subject by the State superintendent:

There were several State institutes held, supported by voluntary contribution; law silent upon the subject. Amendment of 1881 provided district and county institute plan. District plan was a failure from want of funds and other reasons. County plan very successful: more institutes held, better attendance, better work done. Each certificate granted put $1 into the institute fund. Judicious arrangements and management enable some superintendents to conduct the entire institute without additional fees from teachers. Others not so successfully managed financially. Failure of teachers most needing the drill to attend induced me to lay an amendment before the legislature giving superintendent power to revoke certificate for failure to attend. It is hoped much good will result. Also I succeeded in requiring county commissioners to add $25 to institute fund, whereas before it was optional with commissioners.

Our greatest difficulty has been to get experienced workers. Our next requirement will be a stricture upon instructors, requiring them to hold certificate of some kind before they can receive pay from institute fund.

System seems to be gaining a firm hold upon teachers and accomplishing much good.

NEW JERSEY.

The expense of conducting county institutes in New Jersey is paid from the legislative grant for the purpose.

There were 12 voluntary institutes held in the State for the year ending August 31, 1882. They were in session one day each month. Two thousand two hundred and ninety-six teachers were enrolled. The institutes were conducted by the county superintendent and a committee of teachers and without expense.

The following statement was furnished by the State superintendent:

The law providing for institutes was passed in 1854. According to its provisions any one who desired might organize an institute and draw the appropriation. The attendance did not include more than 25 per cent. of the teachers. The time was mostly spent in discussions and debates conducted by the teachers and in exercises given by persons interested in the sale of books or school apparatus. In 1867 the law placed the control of all the institutes of the State in the hands of the State board of education and of the State superintendent. The State board of education, in the exercise of the authority granted it in this law, made the State superintendent the general manager of all the institutes of the State and prescribed a rule requiring the attendance of all the teachers and another providing that their salaries should continue while in attendance. Since these changes the attendance has included an average of 95 per cent. of the teachers of the counties in which institutes are held, and the time during which they are held is occupied entirely by regularly paid instructors. The results are in every wise satisfactory.

NEW YORK.

Four instructors, appointed by the State superintendent, devote most of their time to the district institutes of the State. At the season of the year when institutes are most numerous, additional instructors are employed temporarily. The institutes are generally held by county superintendents and such assistants as they may call to their aid.

The expense is provided for by the county boards, but such boards are not compelled to make an appropriation. In many of the counties in which boards have refused to make an appropriation voluntary institutes have been held.

NORTH CAROLINA.

The State superintendent reports as follows:

Previous to the legislative session of 1877 there were a few voluntary county institutes held in the State. There were also two or three counties authorized by special local acts of the legislature to hold county institutes and to appropriate funds for their maintenance. Institutes were held in such counties annually, and they did much good in awakening public interest in educational matters and in the improvement of private and public school teachers. Their influence was local and did not reach far out from the borders of the counties in which they were held. A teachers' association, with headquarters at Greensborough, memorialized the legislature of 1877, asking for the establishment of a "department of normal instruction" at the State university, at Chapel Hill. The legislature appropriated $2,000 for "a normal school" at the university, leaving its organization and plan of work to the State board of education. The same session appropriated $2,000 for the establishment of "a normal school" for the colored teachers, leaving its location, organization, plan of work, &c., also to the State board of education. I had just entered on the discharge of the duties of State superintendent. Gov. Z. B. Vance, chairman of board; K. P. Battle, president of the university, and myself consulted freely with the late Rev. B. Sears, D. D., then agent of the Peabody fund, with reference to plans, &c. The result was our present plan as to the university institute. We arranged for the colored institute to be held at Fayetteville, and, on account of the want of preparation of the colored teachers, it was decided to have that school one of long terms, giving a course of study of three years, of nine months' session each year, combining ordinary training in text books with normal methods of instruction, school government, and practice in teaching and class and school management, which has continued up to the present time. These schools or institutes awakened great interest in teacher training and popular education throughout the entire State. The appropriations were, however, for only two years. In 1879 the legislature met in January, and, in conformity with public sentiment, continued the appropriations indefinitely. In a separate act the same session provided for county institutes, but the act did not go into effect by reason of an accidental failure of the speakers of the two houses to sign it. The legislature of 1881 met in January of that year and enacted our present school law on the subject of institutes for the counties. In a separate act it also provided for four additional State normal institutes for white teachers, to be located and organized by the State board of education; also, for four additional colored normal schools for the colored teachers, to be located and organized by the State board of education, appropriating $2,000 additional for the said white institutes and $2,000 additional for the said colored schools. The white institutes were modelled after the university institute and the colored schools after the Fayetteville Normal School. For the present year (1885) I shall make one of the colored schools—that at New Berne—a short session of five weeks and have it conducted as an "institute" for the benefit of such colored teachers as are qualified to take advantage of its methods and work. These State institutes or schools have conduced largely to the success and numbers of the county institutes and the number of teachers attending the county institutes. The county institutes are now by their work largely increasing the number of teachers attending the State institutes and are pushing the State institutes to higher methods and greater efficiency. Had it not been for some very unwise legislation at the session of 1883 in cutting off part of the duties and compensation of the county superintendents, we would have worked a great educational reform and revolution in the next two or three years. I hope to be able to do that anyway.

One change in our law in reference to county institutes would result in great good to the schools and school system. The appropriation from the county school fund for a county institute ought to be compulsory on the county boards of education, and not left subject to the pleasure of said county boards, as our law now leaves it. Then, with a good and efficient county superintendent, acting as the leader, adviser, and organizer of the teachers of his county, all worthy teachers would be brought into the institutes and prepared for their work without a penalty inflicted by the law for nonattendance. Compulsory attendance does not compel study and improvement in knowledge and methods.

OHIO.

The following statement is furnished by Hon. D. F. De Wolf, State school commissioner:

The first association of teachers in Ohio was organized in Cincinnati in 1842. The organization survived but a few months and was replaced by the Western Literary Institute and Board of Education. This organization, with a slight change of title, continued until 1845, in which year the first county teachers' institute was held in Sandusky, Erie County. Soon after, another was conducted at Chardon, Geauga County. The State Teachers' Association, organized in 1847, lent additional impetus to the movement by arranging to hold institutes in one-half of the counties of the State. Several counties accepted this proposition.

The institutes of 1845 and 1846 were sustained by voluntary contribution on the part of teachers; but in 1848 a law was passed permitting the county commissioners of certain counties to appropriate money for the support of institutes in their respective counties. One-half of the sum thus appropriated was to be applied to the payment of instructors and the remainder "to the purchase and support of a suitable common school library for the use of such association." This act was amended in 1848, and again in 1849. In 1861 the teachers of two or more contiguous counties were authorized to hold an institute, if thought desirable, and the county commissioner of each of the counties was empowered to appropriate as much as $100 a year for its support, the appropriation to be made only at the request of at least twenty practical teachers. The institute proceedings were to be reported to the State commissioner of common schools.

The law of 1864, amendatory to an act for the reorganization and maintenance of the common schools passed in 1853, provided that county examiners should charge male applicants for certificates a fee of 50 cents and female applicants 35 cents. The amount remaining after deducting from such fees the necessary expenses of the examiners was to be applied to the support of teachers' institutes. The petition of forty practical teachers was necessary to the legal appropriation of such fund to institute purposes by the county auditors and treasurers. In 1865 the amount examiners could draw for travelling expenses was limited to one-third of the total of examination fees.

In 1873 the law permitting the appropriation of money by the county commissioners for institutes was repealed; the examination fee for all teachers was made 50 cents; teachers were permitted to dismiss school and attend the institutes of their respective counties without forfeiture of pay, provided they attended the institute four days: the officers were required to give bond for the faithful disbursement of funds: and full reports were required to be made within thirty days after the close of the institute to the State commissioner of common schools. The privilege of dismissing school to attend the institute was not extended, however, to teachers in city districts having a population of 10,000, unless the boards of education of such districts assented. In union and graded schools the same privilege was withheld, unless a majority desired to attend.

The law at present is practically that of 1873, excepting that, while teachers may dismiss school to attend their county institute, they can no longer draw pay for the time spent in such attendance.

The institute has steadily gained favor as a means of improving teachers and encouraging an educational spirit. The following statistics indicate, somewhat, its progress:

Year.	Attendance.	Expenditures.
1850	1,500	....
1860	1,294	$2,445
1870	6,487	15,021
1880	10,972	19,357
1882	12,078	19,980

PENNSYLVANIA.

While the ordinary teachers' institutes in Pennsylvania are based on the counties, the law recognizes also a district institute system; but such institutes are held at the option of the boards of directors. Of course there is much irregularity in their number, cost, results, &c.

Teachers' associations were held in many counties prior to 1854, but it was in that year, which was the first of the county superintendency, that institutes became general, increasing in number and efficiency. In 1867 a law was passed requiring every county superintendent to hold one institute each year. It also required each county to make an appropriation of from $60 to $200 to defray necessary expenses and allowed boards of directors to permit teachers to attend these institutes without loss of salary. In 1881 a law was passed compelling boards to give teachers this privilege. Since 1867 every county in the State has annually held an institute. In nearly all cases they have been very largely attended, and, while they have done much in the way of preparing teachers for their work, they have been equally instrumental in promoting public sentiment in favor of education. The following extract is from a recent report of the State superintendent:

> The county institutes form a very significant part of the school work of the State and are growing in power from year to year. No factor is more important or serviceable in the way of awakening and deepening interest in educational affairs. Children themselves are too young either to make their wants known in this direction or to feel their needs, and parents are apt to be so much engrossed in material pursuits which go to supply the necessary physical wants of their families as not to feel much zeal in regard to pursuits which have to do with spiritual wants, which are universally less easily recognized and acknowledged. The county institutes, however, by gathering together each year in the centres of advanced culture throughout the State large bodies of teachers and instructors and lecturers, challenge attention and arouse the thought of whole communities, and concentrate the same upon the public school work. They serve also to keep vigorous among the teachers a sense of their calling, that esprit de corps which is felt to be so necessary in all professional life. To this must be added the special benefits which the teachers gain from skilful educators who are present at the institutes with this end in view.
>
> A knowledge of all this led the legislature at its last session to pass an act requiring the school directors to allow school teachers the time and wages while attending and participating in these institutes. As the spirit and intent of the law are liable to be violated by special contracts between directors and teachers, this act should be supplemented so as to forbid such contracts and to require all the schools under the jurisdiction of the county superintendent to be closed during the week in which the county institute is held.

RHODE ISLAND.

The teachers' institutes in Rhode Island were private, not statutory, in origin, but the State usually has coöperated by appropriation of money. This appropriation is expended under the direction of the State school commissioner, who usually conducts the district institutes, assisted by such instructors as he may select. He usually expends a part of the appropriation in the support of the Rhode Island Institute of Instruction. The history of this important organization has been briefly related as follows:

> In the latter part of the year 1844, at the suggestion of Mr. Barnard, Mr. Amos Perry, then principal of the Summer Street Grammar School, in Providence, made arrangements for a meeting of teachers and the friends of education to be held in the city council chamber, to consider the subject of organizing an association whose object should be to awaken among the people a broader and deeper interest in public schools and at the same time lend its support to Mr. Barnard in his work as State commissioner. The meeting was held according to previous notice, at which Nathan Bishop, esq., superintendent of public schools in Providence, presided. Twenty-five or thirty teachers, most of them engaged in the public schools, and a few other

persons were present. Mr. Barnard being unable to attend in consequence of severe indisposition, Mr. Perry explained the object of the meeting, stating, in substance, Mr. Barnard's views and wishes. After a free interchange of opinions, during which several gentlemen manifested a want of faith in associate action, a committee was appointed to consider the expediency of forming a State educational association and to take such measures for that object as they should deem expedient. This committee consisted of John Kingsbury, Nathan Bishop, Amos Perry, Henry Day, and John J. Stimson.

The representative character of the committee will be noted. All of them were identified with the cause of education. One member was at the head of a private school, one superintendent of the public schools, one at the head of a grammar school, one the senior teacher in the high school, and one an influential member of the school committee. The several meetings of this committee were held in the office of the superintendent of public schools. After deliberately considering the question Shall we have an association? it was agreed that the enterprise should go forward, and the foundation of the institute was laid.

An adjourned meeting was held in the State House in Providence, January 21, 1845, when the committee to whom the whole subject had been committed made a report upon the subject.

This report, after being discussed, was referred to a committee of which Mr. Barnard was chairman, with instructions to present a constitution at an adjourned meeting. This meeting, at which Hon. Wilkins Updike, of South Kingstown, presided, was held in Westminster Hall on the evening of January 25, 1845, when the constitution, prepared by Mr. Barnard, was reported and adopted. At an adjourned meeting, held in the vestry of the First Baptist church on the 28th of January, the organization of the institute was completed. This institution has been one of the most powerful agencies in upbuilding the Rhode Island schools.

SOUTH CAROLINA.

There is nothing in the school law of 1878 (latest edition) bearing upon the subject of normal institutes.

The institutes held in 1881, 1882, and 1883 were authorized by special acts of the legislature. That of 1880 (the first ever held in this State) was supported entirely by an appropriation from the Peabody fund.

For the year ending August 31, 1882, the State appropriated $1,500 for the two State institutes, and this amount was supplemented by $1,000 from the Peabody fund.

The State superintendent, in reference to this matter, said:

> Although the State institutes referred to above have been of great benefit to the educational interests of the State, they have not been within the reach of the great majority of teachers, who, on account of their small salaries, could not incur the expense of travel and board necessary to attend them. Efforts will be made to obtain proper authority for the simultaneous establishment of a large number of teachers' institutes throughout the State, so that their benefits may be brought within the reach of those teachers who most need them.

TEXAS.

Texas has two regular normal institutes, one for white and the other for colored teachers. These are open nine months in the year and are practically normal schools.

Of the forty-two district institutes, one for white teachers is held in each senatorial district and one for colored teachers in each congressional district.

VERMONT.

County institutes in Vermont are organized annually, if requested by twenty-five teachers. The expense is provided for by the State. They are conducted by the State superintendent of public education.

There may be five district institutes in each county whenever a county institute is not called for annually. They are usually held one day and evening. Attendance is not compulsory. They are conducted under the direction of the State superintendent of public education. The State makes an appropriation of $12 for each district institute.

VIRGINIA.

The following statement is furnished by R. R. Farr, State superintendent of public instruction:

Our institute system was originated by the first board of education, under authority of law which provided that no public money should be used for that purpose; consequently its field of usefulness has been and is very much restricted. County institutes are required to be held at least once a year in each county in the State, and teachers, by regulation of the board of education, are required to attend under a penalty of $5, to be deducted from their salary. Since 1880, with funds furnished by the agent of the Peabody education fund, State institutes have been held each year for both white and colored teachers, conducted separately by eminent normal educators drawn from other States. The teachers manifest great interest in the institutes, both local and State, and, as a general thing, both are well attended. Great benefits have resulted from institute work in the State, as manifested by a trained and higher grade of teachers.

The most noticeable event in the history of our schools, though not occurring in the year for which this report seems to be required, was the conference of superintendents held in the city of Richmond February 27, 1883. Its membership consisted of all the school superintendents and principals of high schools in the State. Of 109 superintendents — the whole number in the State — 90 were in actual attendance, many of whom travelled hundreds of miles to reach the conference and all of whom paid their entire expense out of meagre salaries, thus giving a practical illustration of the great zeal of the present superintendents in making a success of the important work which has been committed to them. The superintendents were convened in conference by the State superintendent of public instruction for the purpose of unifying and strengthening the system, as well as for the mutual improvement of all. The conference was conducted systematically, adhering strictly to the program. By the kindness of Dr. Curry, agent of the Peabody education fund, we were enabled to secure the services of Dr. J. P. Wickersham for the entire session. Gen. John Eaton, Hon. M. A. Newell, Gen. S. C. Armstrong, President T. N. Conrad, Prof. C. E. Vawter, and Rev. W. B. McGilvray delivered able lectures on various educational subjects. The conference continued in session four days and its benefits have been evidently felt.

WEST VIRGINIA.

The institutes are generally conducted by persons appointed by the State superintendent. The legislature appropriates $500 for these institutes. This is supplemented by small voluntary contributions by the teachers.

In addition to the county institutes, held under the law of the State, the superintendents of many of the counties hold voluntary institutes.

These generally last but one day. The people attend these meetings and frequently give a dinner to the teachers either at the place of meeting or at some farmhouse. The following statement was supplied by the kindness of the State superintendent:

Our law was first enacted in 1872; attendance, voluntary. The institutes were held annually, one for several counties, conducted by a competent person or persons appointed by the State superintendent. Expenses were wholly paid by the Peabody fund. Afterwards, in 1877, the law was so changed that the county superintendent was required to hold the institute and the teacher was allowed his regular per diem for each day he attended an institute, provided the same should not exceed eight days in the year. The expenses of the instructors were paid by the Peabody fund. This law was repealed at the next session of the legislature, 1879, and a law passed requiring an institute in each county for at least five days, with an instructor to be appointed by the State superintendent, at a cost not to exceed $25 for each institute, and appropriating $500 for the purpose. This law took effect in the summer of 1879 and was executed for that year and the year 1880. The deficiency (there are fifty-four counties, and at $25 each the cost would be $1,350), after applying the State's $500, was paid by the Peabody fund. In the year 1881, when the legislature met again, it was found that the law lacked one thing to make it successful: obedience on the part of the teachers; so a compulsory feature, as follows, was incorporated:

Any teacher who shall fail or refuse to attend at least one institute annually, held under the provisions of this section, unless such teacher shall have an excuse therefor sufficient in the judgment of the board of examiners to which such teacher may apply for examination, shall not be entitled to examination during the year within which such failure or refusal may have occurred.

This law has now been in force two years and has been left as it is by the legislature which recently adjourned, and will necessarily be executed this year and next. We think it is good. The only trouble we find is in passing upon the excuses; but these troubles are fast passing away, as the teachers themselves require a rigid enforcement generally, so that the "drones" are driven out and the active workers retained. The attendance shows the success of the law. Our district Peabody institutes are generally conducted by prominent educators from other States and are intended as patrons and centres of influence. They take the place of the county institute for the counties in which they are held. We have generally four or five each year.

WISCONSIN.

The following information respecting teachers' institutes has been furnished the compiler by the State superintendent of Wisconsin:

Public meetings for the discussion of educational topics were held in a number of places under the territorial government; and it is quite possible that some of these resembled an institute for the instruction of the public school teachers. More attention was then paid to this work in the southwestern portion of the State than elsewhere, and meetings of this kind were called at Hazel Green and Platteville.

During the first ten years under the State organization the labor performed in the teachers' institutes was desultory. It was given principally by the State superintendents, in connection with the meetings of town and county associations of teachers. These meetings continued usually from two to six days, though a few are reported as lasting two weeks. The latter partook of the nature of long termed institutes, in which regular instruction was furnished in the branches of study taught in the district schools. Superintendent Ladd reports these as being held in 1852 and attended in some instances by eighty teachers. Generally these gatherings were for the purpose of enabling the teachers to compare with each other their views and methods of work and to learn more definitely, by the means of lectures and discussions, what were the educational progress and needs of the State.

In 1859 was inaugurated the efficient system of holding institutes which has been in operation to the present time. It grew out of the normal school work which the State had then organized in the academies, high schools, and colleges. By an act of the legislature the normal school board was authorized to employ an agent or agents who should, in addition to exercising supervisory control over the normal work of these institutions, conduct teachers' institutes and give normal instruction to them. They should do this in coöperation with the State superintendent. A sum sufficient to defray the expenses of the agency was annually appropriated out of the normal school fund. Dr. Henry Barnard was engaged as the general agent. He secured the services of Charles H. Allen and others as assistants, and began the work with great vigor and enthusiasm. Some of the institutes held the first year enrolled as many as two hundred and seventy-five members. A number of the most earnest teachers in the State contributed in various ways to the success of these institutes. The law which provided for county superintendents, enacted in 1861, required each one to organize and conduct at least one institute each year. Subsequently, Col. J. G. McMynn, Rev. J. B. Pradt, and Prof. J. C. Pickard served as agents of the normal regents. In 1867 a law was passed stating more definitely the duties of the regents in holding institutes. They were empowered to spend annually $5,000 to meet the expenses of the work; and the district boards of the common schools were authorized to allow the teachers employed by them to attend these institutes without losing any time in their schools. In 1871 provisions were made for conducting normal institutes in such counties as receive the least direct benefit from the normal schools, and they should be held at least four consecutive weeks, and a brief course of study should be pursued in them. A sum not exceeding two thousand dollars per annum was appropriated from the State treasury to carry out these provisions. The time in which one of these institutes must be held has been changed and no limits are now prescribed.

The normal regents have effected an arrangement by which one of the professors in each normal school acts, a portion of the year, as a conductor of institutes. In some years over sixty short termed and long termed institutes have been annually conducted.

The present system of teachers' institutes.—The teachers' institutes have now a vital and organic connection with the normal schools. As elsewhere stated, the State is divided into four institute districts, and one professor in each normal school is permanently set apart for the conducting of institutes in certain portions of the year. The spring institute campaign extends from about the middle of March to the first of May; the fall campaign comprises the months of August, September, and October. At these times the four conductors are constantly in the field; and in the month of August, and to a limited extent at other times, other qualified persons, principals of high schools, &c., are employed in conducting institutes. The number of institutes held is not far from sixty yearly.

The usual length of the institutes is four or five days, but those of two weeks in duration are quite common, and in August and September of each year a number are held of four weeks each. For each of these long term or normal institutes, as they are termed by way of distinction, two conductors are furnished by the board of regents; to the shorter ones but one conductor is sent.

The county superintendent is required by law to hold at least one institute each year in his county. He determines the place and, so far as practicable, the time of the meeting; applies to the State superintendent, who is chairman of the institute committee of the board, for aid in conducting his institute; gives the public notice, and labors personally to get his teachers together. In the institute he is the executive officer; it is *his* institute; and, when able, he also takes part in the work of instruction.

Enrolment blanks, blank registers and reports, and small note books for the use of the members are furnished by the board.

The registers and reports are kept in duplicate, one copy being forwarded to the State superintendent and the other kept on file by the regular conductor of the district in which the institute is held.

The board pay the salaries and expenses of the conductors and the expenses of lecturers. Other expenses are properly a charge upon the county.

The assignment of conductors to particular localities for work and the final arrangement of dates are made by the institute committee of the board after due consultation of all interests.

In July of each year a conductors' meeting is held, to which come all the conductors, both regular and occasional, for consultation and work. One of the results of this meeting is a well digested syllabus, or course of study, for the long term institutes. Greater system and uniformity of method also result, with greater enthusiasm in the work and more of the professional spirit. The conductors' meeting has come to be considered one of the educational institutions of the State.

It is no exaggeration to say that probably no part of the whole educational system of the State has more firmly intrenched itself in the confidence and esteem of the people than the institute work under the present system. The credit for this state of affairs is largely due to the veteran institute worker, Prof. Robert Graham, and Hon. W. H. Chandler, of the board of regents, though many have a lesser share with them.

It may be further remarked that, while the general type of Wisconsin teachers' institutes may not be one peculiar and unfound elsewhere, it is at least a tolerably marked and well defined type.

The average Wisconsin institute is not a huge and unwieldy gathering, where conductors lecture and members pass complimentary resolutions; it is not a social gathering, but a place for study and labor. Its membership is generally not too large for some individualization of work, and coöperation rather than passive recipiency is expected from those who compose it; and yet it is an institute and not a school.

There are now four normal schools in the State. A committee of the board of regents coöperates with the State superintendent in organizing and carrying on the institute work. Blank applications for institutes are annually sent to each county superintendent, and, as far as practicable, the time and place preferred in the applications, which are returned to the State superintendent, are conceded. Leading and experienced teachers in the State are designated as assistant conductors, who, in connection with the regular conductors from the normal schools or by themselves, conduct institutes under appointment by the committee.

The annual meeting of institute conductors is held usually at the same place and for two days preceding the annual meeting of the Wisconsin Teachers' Association, at which matter to be presented in institutes for ensuing year and methods of presentation are presented, exemplified, discussed, and criticised. The committee on institutes embody conclusions reached with such emendations as are deemed necessary in a syllabus, which is printed and furnished to county superintendents in sufficient numbers to supply teachers and other applicants each with a copy some weeks in advance of the time the institute is to be held. A course of instruction having distinct relation to three stages of school work — primary, intermediate, and grammar — under the appellations first form, second form, and third form, each embracing a year's work, has in this manner been compassed, and reviews and connections have also received attention. In this form both scholastic and professional work was attempted and matter and methods were developed. The entire work was preparatory to the present phase of institute effort, a phase almost entirely professional in its character.

An effort having been inaugurated to introduce a course of study into the ungraded schools, the institute work for the last year has consisted almost wholly in justifying, exemplifying, and explaining the course of study. This course of study is published in the form of a manual and is distributed as the syllabus of instruction was formerly distributed. The work necessarily involves consideration of what are essential studies, the true order of studies, the objects to be attained through each and at different stages, and the methods and material employed in securing the desired end. Academic work is thus subordinated to the professional and used only as illustrative and for the purpose of exemplifying, making clear, and fixing in mind the points in hand.

The full amount at the disposal of the committee, $7,000, is now annually expended, and the work by this means is limited to the present extent and by the inability of obtaining a greater number of efficient conductors than are at present employed. Lectures upon general or specific features of public school work, for interesting the general public, are encouraged during the sessions of the institute.

The following extract from the State superintendent's report of 1882 gives some information of interest:

This branch of educational work is carried on, as provided by law, by the State superintendent, conjointly with the board of regents of normal schools, the latter annually appointing a committee to coöperate with the State superintendent.

This special branch of the normal service has been carried on during the year according to the syllabus, by the conductors. This syllabus was largely devoted to the grammar or more advanced grade of work in the district schools, its connection with the work in preceding years being to some extent a review of the last two years. During the last three years all the course of study usually embraced in the ungraded schools has received attention in these institutes. Efforts have been made to impress upon teachers the limits and character of work proper to be undertaken in our common schools, the best methods to promote continuous and progressive work throughout the school life of a pupil, thereby inducing the best results in mental preparation and discipline, needful to all good citizens.

A special meeting of the regular institute conductors was held in Madison, in connection with the executive session of the State Teachers' Association, December 26-27, 1881. At this meeting, schemes of work upon the several branches in the third form were presented by the several conductors, and, after full discussion, were determined upon by the conductors and the committee acting jointly. These schemes were printed in pamphlet form, together with directions and instructions by the committee, in the usual form in which the syllabus of instruction has heretofore been published. These were distributed for use in the spring institutes and a sufficient number was retained for use in the fall institutes.

The committee appointed 42 institutes for the summer and fall series and 14 for the last spring series. They were held in 54 counties and superintendent districts and were in session 87 weeks. There were employed 4 regular and 27 assistant conductors.

In 12 counties or superintendent districts no institutes were held which received aid from the State, but in two or three of these counties institutes were held by the county superintendents without aid from the normal fund. The counties of Richland and Vernon each held 2 institutes during the year. The remaining 52 counties in the State held during the year each one institute.

The number of institutes held this year was the same as held last year and extended over eight weeks less time.

In all the institutes there were enrolled 694 males and 2,879 females; total, 3,573, which is 184 less than the number reported last year.

The number in this statement is less than the actual enrolment, since it does not include the number of persons enrolled in the institute held in the spring at Stoughton, Dane County.

The State appropriated for institutes the past year $2,000; the normal school board, $5,000. The total amount of the funds placed at the disposal of the committee was $7,000. The amount expended was $6,527.89.

The disbursements of the committee are classified as follows:

Salaries of the regular and assistant conductors	$3,830 00
Expenses of these conductors	1,787 34
Incidental expenses	910 55
Total	6,527 89
Balance unexpended	472 11
	7,000 00

A marked feature of the institutes is the decreasing number of male teachers in attendance, as shown by the following statement, giving attendance for the past four years:

1879	1,405
1880	1,134
1881	778
1882	694

This decrease may be accounted for by the demand for labor in other vocations offering better wages and more permanent employment.

Teachers' institutes have become a well established and important factor in our educational system, and should continue to receive the fostering care of the State. In these institutes a large proportion of the teachers of our common schools assemble to receive instruction adapted to their wants and to make better preparation for their profession. They receive a knowledge of the best known methods of teaching and carry these ideas and methods into their school rooms, where they put them in practice. The institutes are mainly conducted by men of high attainments and large pedagogic experience, and their influence, added to that of the normal schools, is clearly manifest in the improved character of the public schools throughout the State.

MEMORANDA RESPECTING CITY INSTITUTES.

The following remarks are intended to supplement Table III, already given. Unless otherwise stated, the information in the table refers exclusively to institutes held during the school year, and not to summer institutes. As a general rule, the average attendance of teachers given refers to general meetings, but in some cases to attendance at grade meetings. The statements which follow have generally been furnished by the city superintendents.

Albany, N. Y.—The association of grammar school principals (gentlemen) meets once a month with the superintendent for consultation and discussion of school affairs. A formal paper on some assigned theme is generally read and a discussion follows. The ladies also have an association which meets once a month and is conducted in about the same manner. These meetings have proved exceedingly useful. They are devoted wholly to practical school work. We have, however, lately established a teachers' training class—course, one year—for high school and normal graduates, which, we believe, will produce far better results than occasional grade meetings.

Institutes for the general culture of teachers would undoubtedly be of great value; but I could not recommend their establishment here while we need to expend so much money in other and more pressing directions.

Atlanta, Ga.—The teachers of the public schools are required to attend a meeting of teachers every Saturday, 9 to 11 o'clock A. M., in which institute work is done.

Auburn, Me.—To secure unity and harmony of work, these meetings are necessary. Teachers of the same grade need to compare notes of progress. Every teacher needs the benefit of the knowledge of the others. In these meetings experiences in teaching and managing are freely given. The superintendent can say at once and to all what he knows each one needs. The teachers become acquainted with one another and professional enthusiasm is awakened.

Bangor, Me.—We simply call these teachers' meetings. The chairman of our superintending school committee usually presides. The teachers arrange a program by a committee (which is appointed by the last committee), and publish it in our papers a few days in advance. Some gentleman is invited to address each meeting for about 30 minutes at the close of the discussions. We have nearly 80 teachers and they generally attend. It is by authority of the committee and so is held to be in a measure obligatory. The most frequent instances of absence are among the suburban teachers, of whom we have 13.

Belleville, Ill.—We hold a summer institute for the teachers of this county (St. Clair) of two weeks' duration; four meetings of the teachers' association are held during the school term, of a day's duration each. The expenses are provided for by contribution.

Biddeford, Me.—We have nothing, unless it be the teachers' meetings which I hold at my office. My instructions are upon the subjects taught and upon the management of the schools. I call these meetings as often as I find it necessary. Call the teachers by sections.

Chester, Pa.—We hold no summer institute in Chester. We have a local or district institute comprising all the teachers in the city and any others who may wish to join it. It holds its meetings on each alternate Saturday morning throughout the term. All the teachers, 50 in number, are required to be present at its sessions, under penalty of having a sum equivalent to one day's wages deducted from their salary. The city superintendent of schools is president ex officio, and other officers are elected annually by the members. The object is twofold: (1) the fitting of teachers in the specialties of their work and (2) general mental improvement. The instruction is given by the superintendent and older teachers. The meetings are held in the high school rooms, and, as but little outside help is called in, we have no need of funds to carry on the institute work. The teachers contribute, however, so that in case of necessity we have a small amount of funds at our disposal. In this way we have commenced a library and occasionally employ paid lecturers. I regard these meetings of the teachers as a very effective means of promoting the interest of education among us. They are in my opinion much more valuable than the larger gatherings like county and State institutes, which are inaccessible to many and in which topics are often discussed at length with but little profit or interest to the hearers. The board of education in every place of suitable size should appropriate funds for these local institutes as truly as for building school-houses and employing teachers.

Chicopee, Mass. –The only thing we do in this line is this: We hold two meetings a year of all the teachers, at which we discuss topics pertaining to the general work of the schools. Also, we hold several series of grade meetings, at which only one grade is present. At these we consider matters pertaining to the work of the particular grade present. Lessons are given by different teachers; instruction is given by the superintendent in various phases of the work.

Columbus, Ga.—The teachers of the public schools meet once a week as a normal class. I conduct the exercises of this class.

Decatur, Ill.—In addition to the monthly meeting, I have for the past five years met the teachers of the same grade for forty-five minutes for the purpose of consulting about the work to be done. I have found these meetings the most helpful to teachers of any that I have ever held. During the year I have held sixteen of them. In our schools there are usually five teachers doing substantially the same work in different parts of the city. They meet at my office on Saturday forenoon at an agreed time. The number is small enough to allow everything to be done without formality. The work to be done for the next month is talked over and the amount of it settled. Then some time is usually given to a discussion of methods of presenting it to a class. Finally, any school difficulties that may have arisen are talked over. I find that teachers who dislike to engage in the discussions of our general meetings on account of the numbers present are altogether free and unembarrassed when seated around a table in my office.

Detroit, Mich.—I think that usually in general meetings of teachers (that is to say, meetings of an entire corps) too much time is spent in details. Meetings of sections should be held for this purpose. In general meetings I think the aim should be to arouse professional enthusiasm and inculcate the principles of pedagogy. In these, teachers should be led to read and think, and to feel deeply the responsibilities that they have assumed.

Elizabeth, N. J.—Last year the county institute met in our city, the session lasting three days, and our schools were dismissed for a week to enable the teachers to attend.

Formerly our normal school met on Saturday, once every two weeks, the sessions lasting from 9.30 to 12. An instructor was then employed, but as the city allowed but $10 per sesssion it became difficult to secure proper lecturers. On account of our city's financial condition, it is impossible to get money for many things that ought to be provided. Teachers' salaries and fuel bills are the only items not affected by the present state of affairs, as the money for these is derived from the State funds.

Our present normal school meetings are more in the nature of debates. The session is opened by reading of the Scriptures and the Lord's prayer by the superintendent. An essay is then read by one of the male principals, and for this purpose we have been using some prize essays written by teachers in the schools of San Francisco. The reader of the essay then briefly states his own views and is followed by the other two male principals, who state theirs; a discussion of the subject by any of the teachers who may choose to speak then follows. The superintendent from time to time makes such comments as he thinks proper, and addresses have been made by the president and members of the board. These discussions have awakened considerable interest and have been reported at some length in the local press. It seems to be about the best we can do without regular instructors.

Elmira, N. Y.—It is the practice to meet six to eight times each year for such exercises as circumstances may demand. While we have no other prescribed meetings of teachers, it is the practice of the principals of the district schools to hold meetings of the teachers under their supervision at times varying from once each week to once in two to four weeks. These meetings are informal. It has not been the custom in this city to hold teachers' meetings except as stated. Our schools, except the high school, include the primary, intermediate, and grammar school grades and are in charge of a principal who has supervision of all grades, giving to each principal from fourteen to eighteen teachers under his charge, the superintendent having the general supervision of the whole. Whatever of institute work we have in our schools under this system is made continuous. Our principals are not only competent to instruct pupils, but the teachers also, and, having the work constantly under their care and supervision, are prepared to give the assistant teacher the necessary drill and instruction for the work.

Erie, Pa.—The teachers' institute in a city employing from 20 to 200 teachers should be organized and conducted on broad, general lines of effort that especially tend to develop strength and breadth of character in the members. There should be a line of culture calling into earnest, enthusiastic coöperation all the teachers, from the wisest and best to the inexperienced, timid beginner. In order to do this, educational principles should hold high preference over the technicalities of mere method. Every teacher finds it easy to be interested in a general principle, but difficult to consider a special method for a particular step in a certain grade in which he is not practically engaged. The daily work of teaching, like that of other professions, is narrowing, and it should be the chief duty of the institute to check this tendency of the labors of instruction, and, as it were, compel the strong to grow stronger and the weak to become strong as men and women; for our schools suffer more from the want of stirring, growing, hopeful men and women than from anything else. The man or woman that bears unmistakable signs of a mild decay, although clothed in successful experience in handling the minutiæ of the best methods, will soon be next to soulless in the school room, and that which should be fresh, upbuilding instruction will gradually harden into lesson grinding, with scarcely a flavor of real education in its composition. It is a sad but truthful statement that there are many veteran teachers who have become "withered sticks," not on account of their early training or mental set, but on account of their not being called upon to tread other paths than those trodden in the performance of their daily tasks.

The best topics for general growth and interest in an institute are those that concern the great questions of the day. They may take several forms: important current events; the life, character, and policy of prominent public men; leading authors: their education, works, style, teachings, &c. The weakest can do something with a topic of this kind, while there is abundance of room for the strongest. As an illustration, the following are some of the general topics used in an institute of over one hundred teachers, embracing those who had received the advantages of the university, travel, and extensive reading and those, on the other extreme, who were recent graduates of the high school:

Darwin: (1) Early years; (2) education; (3) travels; (4) studies; (5) publications; (6) theories.

George Eliot: (1) Life at home; (2) life in society; (3) writings, style, character, individuality; (4) rank as a writer.

Carlyle: (1) Family; (2) education; (3) marriage; (4) habits; (5) author; (6) critic; (7) what entitles him to fame?

In the same institute Lord Beaconsfield and Gladstone were both studied in a similar manner. The political philosophy of these men formed a topic broad enough for the best. The institute was so conducted as to rely on the younger and weaker members for the mere facts, while the able members were expected to concentrate their efforts above the fact line in the region of discussion, opinion, and judgment. The general plan of management was based on the following outline of work: (1) Educational facts and principles; (2) important current events; (3) science; (4) art; (5) language; (6) historical biography.

Dr. Harris, who certainly is good authority, says that the average teacher ceases to improve after three to four years' experience. If this is a fact there must be a cause for it and a remedy, for as a rule the young teachers come from the very brightest class of our young people, and, if they become mechanical, treadmill workers, it is because they are handled like machines.

Teachers should be known in the community, not as instructors of the young merely, but as men and women who can take a creditable, if not a commanding, part in the world's public work. We know that such is not usually the case. It need not be that the teacher's kingdom shall be confined within the walls of a school room, and the institute, if directed properly, will continue to widen and strengthen the teacher's influence, not only in the school, but in the community.

The above is not mere theory, but it is drawn from a rich fruitage of experience, running through a number of years.

Fort Wayne, Ind.—The principals of all the schools covering the nine lower grades meet the superintendent once a week or once in two weeks, when all matters appertaining to the schools, methods, &c., are thoroughly examined and all the points made and directions given by each principal to the teachers under her charge at a teachers' meeting in her building, where criticisms are brought down closely to the work of each teacher. The teachers of the city meet in sections, at the central building, for instruction in the special studies, each study being under the charge of the special teacher of that study. Our experience is that this is better than the ordinary institute work.

Fond du Lac, Wis.—No institute is held in this place for city teachers. Every alternate Monday evening all the teachers of the city public schools meet for two hours' work. No penalty is attached for nonattendance and no expense is incurred. The meeting is conducted by the superintendent, who usually leads in the discussion of all matters relating to the policy, administration, and discipline of schools. Exercises are also conducted by teachers, previously assigned, on the various branches taught in the schools. A committee of teachers makes a program for the succeeding meeting. The superintendent talks about such matters—excellences and defects in school work—as the daily visitation of schools suggests. Moreover, he takes advantage of such events in the scientific and literary world as he thinks will aid teachers in their work. There are now forty-three (and we never have more than fifty) teachers, so that it has not seemed best to separate them into sections. I made an effort some years ago to divide the teachers into sections, thinking that the work of teachers' meetings might thus be better adapted to the several grades; but primary teachers objected. They preferred to keep alive their interest in knowledge of the topics taught in higher grades.

Galesburg, Ill.—The tendency in city schools is to give so much attention to preparation for special grade work that the culture of the teacher is forgotten and neglected. Scholastic and professional preparation should never be separated. The teacher should, to a greater or less extent, engage in the kind of work he demands of his pupils. The tendency, I think, in educational matters is to exalt "normal methods" at the expense of real scholarship.

Grand Rapids, Mich.—We hold regular monthly teachers' meetings, attended by all the teachers. At these meetings no regular instruction is given. When necessary, grade meetings are called, to which the teachers of a certain grade are called. These meetings are held for purposes of special instruction.

Kansas City, Mo.—For special work, teachers should meet in sections. The exercises should be partly class and partly a discussion of methods. All should participate, but only the best ought to conduct exercises. Lecturers and constant talkers may be tolerated occasionally, but their dinner bell speeches chill and frost bite all enthusiasm in the teachers. All sessions should be working sessions, not talking.

Knoxville, Tenn.—I think some definite plan should be adopted for holding these meetings that shall make them interesting to teachers. Our meetings are generally held on Saturday, and our teachers feel it is requiring too much of them to attend these meetings after teaching all the week.

Lancaster, Pa.—All cities should provide for at least one week's instruction annually, just before the opening of the schools, by specialists, in some one branch especially necessary in each grade. Thus the grammar school teachers might profitably devote a week's work to industrial free hand drawing, to the sciences, or some other branch; the primary, to object lessons, vocal music, &c.

Such instruction should be given under the direction of the city superintendent and paid for by the city. In this way the teachers would grow up to the demands made on them from year to year, and by confining the work to one branch under a well qualified teacher considerable progress could be made.

Lynn, Mass.—These institutes are termed teachers' meetings by us and are of no additional expense other than for simple apparatus occasionally or to defray car fare from Boston of some lecturer once in six months.

Our work is done by practical illustration of ways and means by experienced and successful teachers in our own corps or by the superintendent. Subjects taken up have been: Psychology related to teaching, discipline, organization, and management of schools; general lessons, to induce thought and expression; methods in arithmetic, geography, grammar (language), history, drawing, writing, music, &c.; reading especially. Each meeting may be termed a "monthly institute," of which we have 9 during the year.

Teachers are usually punctual and regular in attendance, but are "excused" upon almost any pretext by "general indulgence" of the school committee.

We find our meeting of much benefit in all our work, particularly among young tyros and in quickening some old routine teachers who *hold* positions rather than *fill* them.

About 70 teachers are from or have attended normal instruction, hence appreciate to a good degree all means of improvement.

Macon, Ga.—Our normal class is simply indispensable. All the teachers who have taught in our schools, with a single exception, have come in without special training and it has been a matter of necessity to train them for their work. This, I have found, can be better done in normal class than in the teacher's class room. Here and there throughout the State we have a normal school graduate from the Peabody Normal School at Nashville, Tenn. (one in our city public schools), but generally the first special training is received by the teachers of our city graded public schools in these normal classes, composed exclusively of public school teachers.

We are making a strong pull this year, under the leadership of our State school commissioner, Dr. Orr, for a normal school in Georgia, and with some prospect of success.

New Haven, Conn.—I do not believe in long institutes. All teachers, old and young, need theoretical instruction which shall help them to grasp principles, and this instruction should be given a little at a time, so that it can be digested and connected with daily practice in the school room. A few points, enforced each week and perhaps illustrated with a class, will build up the teaching powers of those who have not had a professional training, and they will not be wearied out by trying to apply a crude mass of theories, many of which are more brilliant than practical. The attendance at such meetings should be voluntary. There should be such a tone of interest and enthusiasm in a community as will inspire teachers with an honest and eager desire to know how to work with the least waste of energy and with the best promise of success. They will attend, knowing that if they do not a discriminating board will soon see their indifference and narrowness and in all probability dispense with their services. Such, in brief, are my views. A careful, constant, patient working out of the great principles will tell immensely in any educational community.

Newark, N. J.—During the last three months of the senior year the seniors are instructed in pedagogics and other kindred subjects by the superintendent of schools. With this preparation they begin as teachers quite successfully. Our teachers are nearly all selected from our graduates, for the public schools.

Northampton, Mass.—I would say that we usually have a county institute held two days in May and another in the fall, under the instruction of the agents of the State board of education, which most of our teachers attend. They are held in different towns from year to year. These institutes are very valuable, as they present the most improved methods of instruction by the best teachers. Our city schools are very much scattered and the facilities for travel not very good from some sections. This prevents holding institute meetings as often as we would like to hold them.

Portland, Me.—In one school, consisting of six classes or grades, 1 to 6 inclusive, from entrance at five years, we appoint 10 young women, generally graduates of our high school, two for each room, and these, under a competent principal, form a practice or training class, and they give the instruction in these classes for one year. These young women, having previously to entering this class passed the regular examinations and been certificated and elected as other teachers and being under one-quarter the pay of regular teachers, are to all intents subject to all the responsibilities and rights of other teachers, except they are required to observe the directions of their principal in all their work and are to prepare for and receive regular instruction one hour after school in the afternoon from their principal and others in didactics, school economy, &c.

After these young teachers have spent a year in this way, in teaching under good inspection, criticism, and instruction, they are elected to positions where they have the entire responsibility. We then find them admirably prepared for their work. They seldom fail to give us good satisfaction as teachers.

Often young graduates of normal schools come to us to take advantage of the practical work in this practice school. The previous training of the normal school, supplemented by a year's practice under an expert, gives them great superiority over untrained teachers.

Portland, Oreg.—This year we have had the most interesting and profitable teachers' institutes ever held in this city. The city superintendent and the respective principals constitute an executive committee. The board delegate power to this committee to prepare all programs and control the entire work of the institute. The committee prepare a special program for each institute one month in advance. The superintendent issues a circular to teachers giving the program. No teacher is at liberty to decline the work assigned.

We assign miscellaneous topics, requiring from three to ten minutes each, to the total amount of thirty minutes. Teachers speak extemporaneously or read their productions. We have also forty-five minutes for a general topic. This pertains to school work: Reading, writing, morals, discipline, &c.

Providence, R. I.—The superintendent examines orally the first class in each grade of schools every term and illustrates and explains the method of teaching to be pursued. The superintendent has very frequent meetings with individual teachers at his office for personal advice and instruction.

Racine, Wis.—In the contracts with all teachers there is a clause making attendance upon the teachers' meetings and institutes obligatory, and no difficulty has been found in securing excellent attendance. At our regular Saturday meetings the time is divided generally about as follows: The superintendent occupies the first hour in details of practical school work, noting complaints and suggesting remedies, answering questions, suggesting new plans, and issuing instructions upon all needed school work; the second hour is devoted to some study common to all the schools, illustrating methods of instruction and explanation in arithmetic, grammar, &c. During the past year we have devoted the third hour to a critical reading and study of Shakespeare, in the Merchant of Venice, under the tuition of Professor Sprague, of the high school. During the year before the teachers were divided into two classes: one class took up astronomy under the superintendent and the other class studied natural philosophy under Professor Sprague. We find our meetings pleasant, interesting, and indispensable in our school work.

Rochester, N. Y.—An institute of all our teachers is held regularly once each month. Twice each month, generally, I hold "grade institutes," which all teachers in a particular grade are required to attend. At the general institutes, in addition to some practical talk on methods by some experienced teacher, we have many in and about our city, as we have here a university and theological seminary and near us two State normal schools. I give a "running commentary" upon notes made in the various school rooms visited during the month, both by way of adverse criticism and commendation. These talks I aim to make thoroughly practical and cover both management or discipline and methods. The "grade institutes" I conduct myself, giving instruction to the teachers in methods particularly adapted to their work. Taking up each subject in its order they are required to teach, opportunity is given teachers to ask questions; and a free discussion is not only allowed but encouraged upon pertinent topics. These exercises are varied by "class exercises," in which some skilful teacher is required to bring her class to the institute and illustrate her method in conducting a particular recitation. The length of time for each institute is about two hours.

Syracuse, N. Y.—In cities where graduates of the home schools must, more or less, be employed as teachers, it becomes a necessity that training schools should be organized, where those desiring to teach can receive sufficient professional knowledge to enable them to enter the work of instruction with some appreciation of its responsibilities and the disastrous results if this is poorly or improperly done.

The best teachers and those most successful should be placed at the head of such school. Sufficient time should be given to this work to enable the persons entering it to get clear and comprehensive insight into the laws of mind and the mental processes by which children learn, the best methods of presenting to the mind what is to be learned, and the condition of the mind of the pupil in order to receive the greatest benefit.

Such results can only come from a thoroughly organized plan of work, which should include thorough instruction from competent teachers in theory, and be followed by practice in the actual work of teaching, under the direction and subject to the suggestions and advice of competent and skilled teachers in the several branches which are expected to be taught.

It seems to me that school authorities, especially in the larger towns, should provide means and institute measures for furnishing such practical knowledge for the elevation of the schools over which they have the guardianship.

Topeka, Kans.—Beginning with the Saturday preceding the opening of schools for the year, we hold a general teachers' meeting, on which all teachers are expected to attend.

At each general meeting the past year a paper on American history or literature has been read, lectures have been delivered on physiology and school management, and the teachers have discussed and answered such questions as a committee appointed and reporting at the previous meeting have prepared. Object of general meetings, to consider questions of general interest and to prevent the teachers becoming fixed in narrow views.

For special work the corps of teachers is divided into three sections: teachers of first and second grades constitute the first section, third and fourth the second section, and fifth, sixth, and seventh grade teachers constitute the third section. The meetings of the sections consider only school work. These meetings are not held at the same time as the general meeting.

A teacher who is absent or tardy at a meeting suffers the same penalties as though she were absent or tardy at school. The superintendent has entire control of teachers' meetings. There is no expense. General meetings are held every four weeks of school.

Utica, N. Y.—Our teachers are mostly graduates of the Utica Academy and have passed through the several grades of our schools as pupils; hence they have a knowledge of teaching in all grades before graduating and get special instruction at our teachers' meetings, held monthly.

CHAPTER IV.

PEABODY INSTITUTES IN THE SOUTHERN STATES.

A very interesting feature of the new education in the Southern States of the Union is the connection between every wise effort for the spread of popular intelligence and the Peabody fund. Dr. Barnas Sears, the first secretary, and Dr. J. L. M. Curry, his wise successor, have done so much to associate their names forever with this high work for the benefit of the former slave States that they need little commendation here; yet their wisdom, insight, methods, and spirit are such admirable examples for imitation in the future dispensing of such help to struggling communities that a word on the topic in this place is both appropriate and unavoidable.

One of the wisest things about the administration of the fund has been the coöperation its officers have always shown with the best men and the best enterprises related to public school work. Where an impetus was needed, where a struggle was too exhausting, help, and intelligent help, has been given. This statement, true in many respects, is specially true about the training of teachers. The general but utterly dangerous notion that any person without natural aptitude or special training for the work can teach children, has been a permanent misfortune to many parts of this country, and to no part so utterly damaging as to the Southern States since the war, for there the situation required at once thousands of well qualified but self sacrificing teachers, and the supply of such was almost entirely lacking. Those States knew little about the modern methods and appliances of modern teaching and never had instituted public agencies for the communication of such knowledge to the mass of men and women who had been forced or tempted to assume the duties of teachers in the public schools.

A.—PEABODY INSTITUTES IN SOUTH CAROLINA.

Among many wise and prescient educators engaged in the work of reforming the South to the requirements of the present day, Superintendent (afterwards governor) Hugh S. Thompson, of South Carolina, was conspicuous for practical sagacity and ceaseless industry. Becoming assured that his State had arrived at the point where its people and its teachers would appreciate a well considered attempt to improve the pedagogic qualifications of its public instructors, he, with the ready help and solid indorsement of Dr. Sears, began teachers' institutes in South Carolina in 1880. The reports quoted hereafter in this chapter show what was done; but only sagacity and caution equal to theirs can know or express what dangers they escaped and what mistakes they avoided. The two objects steadily kept in view were to instruct a large number of the public school teachers of the State in the practical discharge of their duties and to cultivate, within and outside the teaching profession, a widespread desire for the longer and more perfect discipline of a normal school.

The general agent of the Peabody fund, the late Dr. Sears, agreed to put at the disposal of the State superintendent \$1,000, to be used in defraying the expenses of teachers' institutes. But three plans could be suggested by which the money could be expended so as to benefit the teachers: The first was to hold institutes in all the counties of the State; the second, to hold an institute in each of the five congressional districts; and the third, to hold one institute for the State at some point that would be readily accessible and that would also be attractive to teachers during the heat of summer.

One can now understandingly read the detailed reports made to Superintendent Thompson by Professor Soldan of two sessions and by Mr. Montgomery of one session spent in this work. Mr. Soldan devoted himself to the institutes for white teachers; Mr. Montgomery worked among the colored teachers. The documents, with unimportant omissions, are reprinted from recent annual reports of the South Carolina public schools:

I.—REPORT OF THE FIRST NORMAL INSTITUTE OF SOUTH CAROLINA.

By Prof. L. F. SOLDAN, *of St. Louis, Mo., Principal.*

In submitting this report to you, I wish to say that it is not a report of work done by me, but a report of the proceedings and character of the institute. The remarkable success achieved by the institute was due, in the first place, to the efforts of the State superintendent, with whom the idea of the institute, its organization, the selection of the teachers, even the procuring of the necessary funds, originated; to the support of the Peabody fund, through its late agent, the lamented Dr. Sears; to my able colaborers, Messrs. Archer, Riemann, Davis, Joynes, and Peete; to the earnestness and good tact of the teachers attending the institute as students, and the never failing encouragement of the people of South Carolina and the citizens of Spartanburg.

I have prefaced my report by this explanation because it shows the object which was to be accomplished by the first normal institute of the State of South Carolina.

While it was expected, of course, that the organization of a school of this kind would be as difficult as the beginning of any important enterprise, and, like all things that are worth an effort, be a matter of slow growth, it was thought possible to achieve some progress in the following respects:

(1) In the improvement of teachers, by the impulse which the exchange of opinions among professional people brings about, by the encouragement they receive when they see that their methods of teaching and of disciplining a school are correct and have been adopted by others; they learn what ways and means talented teachers are using to overcome difficulties which present themselves in every school room. In normal institutes, the teachers gain information, both general and professional, and receive impulses in the direction of intellectual work which will follow them into life. This will not only improve their own minds, but will also make them better teachers.

for he who is a student, besides being a teacher, can sympathize better with children in their attempts to acquire knowledge, and he can realize more fully the difficulties with which they meet; he will be more skilful in pointing out ways in which these difficulties may be overcome.

(2) In the improvement of educational work in general throughout the State, by strengthening the belief in the necessity of continued improvement and progressive work in all the schools. If but one teacher in a district attends a normal institute and returns to his home with some better ideas and with the ambition to apply them practically, and thereby improves his own school, public opinion will compel other teachers in that district to imitate his example, and thus, through him, the normal institute will affect others and be of widespread beneficial influence; the attention of all teachers, no matter whether they attended the institute or not, is drawn towards it, and the educational work everywhere in the State will be carried on with new vigor. In the discussions to which the normal institutes give rise, the educational interests of the whole State are apt to be considered and remedies for defects are sought and found.

(3) In the improvement of common schools. Normal school institutes are means, not ends. They are maintained because they are of great advantage to the common schools, for they are the means of improving the common school teachers. There are three ways possible in which professional improvement can be brought about: (*a*) By the thorough review of the common school studies, thus refreshing the minds of the teachers on these subjects, correcting possible misapprehensions, and dwelling on those modifications which the progress of science has brought about; (*b*) by pointing out better methods of instruction, and discussing those humane and efficient methods of discipline which further the political objects of the State by educating good and intelligent citizens and by counteracting crime; (*c*) by drawing the attention of the people of the State towards educational improvement, by enlisting their sympathies, and showing them the direct advantage of education, thus gaining their active co-operation. To sum up, the objects of the normal institute were the improvement of the teachers, the animation of educational work, the improvements of schools in regard to methods of instruction and discipline, and the direction of the attention of the public to the cause of education.

Plan of the work.—Since the attendance was entirely voluntary on the part of the teachers, it became evident that the only feasible plan to make the institute a success in regard to attendance was to make its proceedings interesting in the first place and valuable to each teacher in the second. Neither the first nor the second by itself would have been sufficient. Without interest the work would have failed to enlist the sympathies of the students and would not have attracted them and secured their continued presence. Without making instruction valuable, the institute would have been merely a kind of public entertainment, for which earnest teachers would not have been willing to sacrifice time and money and to leave their school work.

The plan of the work, as regards its spirit and tone, was intended to be this: It should be practical in its character, rather than literary or scientific. Those things in particular should be taught which have a direct bearing on the work in the country or city school, and which, if the teacher avails himself of the suggestions made, would surely improve the work in his own school and make the instruction which he imparts more efficient. The principal portion of the work of the institute, therefore, was to be instruction in the methods of teaching the common branches, namely, reading, arithmetic, grammar, &c. The institute should furthermore lead the teacher to an appreciation of the philosophical principles on which good methods of teaching rest. Hence, the main feature of the program was the study of the science of education. It included also a general explanation of the characteristics of child nature, which must be understood by the teacher if he wishes to teach well and knowingly. The scope of the philosophy of education is wide enough to give work for thought and reflection even to the deepest mind. The presentation of this philosophy, however, to an audience not composed of specialists, must, of course, be so arranged as to be popular and interesting in tone, so as to appeal to the understanding of the novice in teaching as well as to the teacher of the highest grade. While the preceding was the outline laid down for the regular course, another reasonable demand had to be met in some way or other that was not provided for in the plan. There were many teachers eager not only to obtain professional knowledge but also desirous of improving the opportunity by obtaining general information in science and literature. It was necessary to arrange extra courses for them, so that the strongest among the students, as well as the weaker ones, should find opportunities to do the kind of work they needed most. These were the chief features of the work as planned; that it was a correct estimate of what the teachers required became evident from the fact that the attendance of the institute increased steadily. It was better attended during the third week than during the first. When an opportunity for study out of the regular school hours was offered, it was expected that a small portion only of the students would avail themselves of it, but so many applied for admission that the room was not large enough to accommodate all, and several classes had to be formed instead of one.

Opening of the institute.—The institute was opened on the 3d of August in the chapel of Wofford College, at Spartanburg, with appropriate exercises and addresses, in the presence of about a hundred citizens and teachers. It was evident from this beginning that the original estimate of attendance had been too low, and that with the small number of teachers constituting the faculty the greatest energy was necessary to organize and keep up the institute. A division of the students into two and later into three and four classes was effected.

In the course of the first morning session of the institute the object of it was set forth and some stress was laid on the following points: The chief aim of normal institutes is to educate efficient teachers. Teaching as a profession presupposes a knowledge of the studies that are to be taught. Both general and professional knowledge are required. To know a thing and to know how to impart this knowledge to another are very different things. The special work consists in pointing out the best ways of imparting knowledge to children. Rational teaching does not mean to make the pupils commit things to memory mechanically, but to make each lesson a lesson of thought and culture. It is the object of this institute to show how to do this. Teaching should aim at humanizing the pupils, at making them good men and women. The teachers meeting at this institute will do good work for their pupils by doing good work for themselves. The teacher should be a student in order to be able to sympathize with the pupil in his struggle for knowledge; he should not be a taskmaster simply, but the child's helping friend. To any one who has this high opinion of his vocation there is no higher title than that which adorns the grave of Agassiz: "TEACHER."

The proper preparation for the work of teaching is some natural aptitude in the first place, which no training can give; a knowledge of the common branches that are to be taught; a knowledge of methods of teaching, based on a fair idea of the laws of the mental and moral development of the child. It is the object of normal institutes to give instruction in these directions. Any person can crowd facts into the memory by mechanical repetition. How long they will stay and what good they will do is another question. Instruction and education are not synonymous terms. Instruction puts new facts into the mind; education trains the faculties that are there already. Good teaching sees to it that the child's thinking powers and his faculties are developed by his lessons.

Regular normal schools have a course of instruction which extends over several years. If so much is required to educate a teacher thoroughly, what then can be accomplished in the short time of four weeks, which is the space allotted to this institute? Perhaps an illustration will answer the question. A traveller may be told by the guide, when he visits one of the art museums of the Old World, that it would take years to become familiar with all the treasures there stored away. This may be true enough. But should this deter any one from visiting the museum for a day, if this is all the time at his command? A single visit is enough to carry away impressions which may never be lost again and which will make his life better and richer. He may carry away with him, in his recollection, a never failing source of inspiration and delight. In a similar way a teacher attending the normal institute, even if only for a short time, will obtain inspirations that benefit him in his practical work. The doors leading into science and arts will be thrown open to him, and while there may not be time to enter into every one, he will know in future where to find them.

It is one of the teacher's duties to avail himself of opportunities for self improvement; another illustration will explain this. Some of the geographical maps which we see at times are perfect works of art. It is said that four years' work is required to engrave the plate for one of them. For four years the engraver bends over his work, day after day, seeking to make each line exactly what it ought to be. He gives it this careful preparation because he knows that each mistake, each blemish, will appear in every impression that is taken from the plate, and thus will be multiplied a thousand fold. In a similar way the soul of the teacher is multiplied in his pupils. They are taught by his example as much as by his words; and thus whatever care he bestows upon the education of himself will redound to the benefit of his pupils.

On the second morning the work of the institute began. The morning session lasted from 9¼ to 12¼ o'clock, supplemented by incidental morning lessons before the opening, afternoon classes and lectures, and evening lectures.

The course of study.—The faculty of the institute divided the work among themselves in the following way: Methods of teaching grammar, Mr. Henry P. Archer; methods of teaching arithmetic, Mr. R. Means Davis, methods of teaching geography, Mr. E. W. Riemann; methods of teaching singing, Mr. A. T. Peete; methods of teaching reading, by the principal; science of education, by the principal.

Arithmetic.—Sanford's Higher Arithmetic was studied with special reference to fractions. The classes were much interested in the work and appreciated its thorough nature.

Grammar.—The topics treated were: (1) Grammatical analysis; (2) clausal, phrasal, and verbal syntax. No special text book was used, but the discussion of nice grammatical points formed the subject of study. The work in this department was very animated, giving rise to discussions that did not end with the lesson.

English language.—Prof. E. S. Joynes, of the University of Tennessee, delivered, besides the public lectures to be mentioned further on, a series of class room lectures of such great scholarship and richness that no report can do justice to them. Although Professor Joynes was but for two weeks connected with the institute, his work belonged to the most valuable that was done. He showed to the students the rise and progress of the English tongue and impressed all with the high rank it occupies among the languages of the earth. For the teachers his lessons were especially valuable, because they showed that in all grammatical questions the highest arbiter is common sense and the result of that great science of our times, modern philology.

The following is a kind of table of contents of some of these lectures, showing how extensive was the ground covered and how logical and systematic the arrangement:

NORMAL INSTITUTE LECTURES.

English grammar, the noun (with reference to history, analogy, and analysis).

NOTE.—Definition, classification, derivation, &c., must be omitted from want of time.

Grammatical forms of the noun.

I. *Number.*—Remark: Simplicity of number—forms in English, contrasted with other languages; disappearance of old forms—Why?

(1) Regular form: Plural in *s*; its origin by compromise of diverse forms; its modification:

(*a*) Euphonic in sound only, as cats, ships, bricks, dogs, tubs, toads, according to *quality of final letter.*

(*b*) Orthographic in spelling also: (*a*) By organic necessity (*s* sounds incompatible), as gases, foxes, dishes, churches. (*b*) To preserve correct sound, as negroes, cargoes, potatoes, &c., except foreign words, as quartos, octavos, pianos, &c. (*c*) From earlier forms (explained historically), as ladies, wives, thieves, &c.

(2) Irregular forms; their limited number. Why? 1. Primary or original: (*a*) Old English, of German origin, as men, teeth, mice (internal vowel change), oxen (old declension now obsolete). (*b*) Foreign forms of various origins, as axes, data, nebulæ, radii (Latin), phenomena (Greek), cherubim (Hebrew), beaux, Messieurs (French), banditti (Italian), &c. 2. Secondary or developed (in growth of language): (*a*) Mixed forms, old (irregular) and new (regular) processes combined in the same word, as chick-en-s, child-er-en, brether-en. (*b*) Double forms, old and new processes distinct in different words of diverse use, as brethren, dice, media, indices, cherubim, brothers, dies, mediums, indexes, cherubs, &c. Such forms are called paronyms. The law of paronyms, stated and illustrated. 3. Plurals with singular forms, as sheep, deer, cannon. These forms are really collectives used as plurals, yet they show that the plural may be expressed without form. 4. Plural forms, singular: Mathematics, politics, physics, &c. These forms have lost their plural power. Why? (5) Apparent plurals, which have become plural from analogy of form, as alms, riches, &c. 6. Plurals from adjectives, as bitters, greens, &c., which have become nouns. 7. Compound plurals: (*a*) Vary the principal part; fathers-in-law; goose-quills. (*b*) Vary both parts: men-servants. (*c*) Transfer to last part by analogy of usage: major-generals, judge-advocates, spoonfuls. (*d*) Misses Clark or Miss Clarks.

II. *Gender.*—Its definition, as of words, not of objects; a grammatical, not a natural distinction. Founded on the idea of sex, but not always limited to it. Gender often purely formal; sometimes even contradicts sex relations. Illustrations. Difficulties of gender, in different languages; none in English.

(1) Grammatical (formal) gender of words as such, without regard to sex, no longer exists in English; has disappeared. Existed formerly in both nouns and adjectives. Illustrations of effete forms of gender: vix-en, spin-ster, huck-ster. Also of mixed (secondary) forms: singer song-ster, song-str-ess.

(2) Logical (natural) gender of nouns according to meaning is retained in English. Expressed: 1st, by different words; no grammatical relation. 2d, by compounds, few and rude—Saxon; showing what? 3d, by derivatives, usually, -ess (French, -ice; Latin, -ix). Hence, restricted to Latin or French derivatives only. Its use not to be extended even in these. Why?

(3) Rhetorical (personified) gender—by voluntary personification—conscious elevation of style. Economy of grammatical form, with increase of reserved power.

NOTE.—Simplicity, truthfulness, suggestiveness. Loss or gain?

III. *Case.*—Its definition, form, or relation? This should determine the treatment. In form, most English nouns have no case; others, only one (the possessive). In relation, case depends in English mainly upon position or emphasis. Illustrated.

Pronouns have case-form more largely than nouns. Why?

Possessive case-form restricted to persons and living things. Why? Or personified nouns—rhetorical possessive. Illustrations. In other nouns, position only, or use of preposition. Double forms of possessive are combined in idioms like: A book of John's. A portrait of my friend's. This heart of mine, &c. (Analagous to word forms, like chick-en-s, song-str-ess, &c.)

Case forms have largely disappeared in English. Thus many constructions once clear are now obscured or idiomatic. Also the term object is ambiguous in grammar. Illustrate. The grammatical object (of thought) not limited to physical object (of action). The distinction illustrated. This makes clear many disputed idioms by only giving to the term object its proper logical extension. Illustrations.

IV. *Person.*—Has no form in the noun; is therefore not a grammatical element of the noun.

This syllabus gives only the outline of topics used by Professor Joynes to illustrate the principles of the growth and development of grammatical and structural forms in language, which had been the subject of his more elaborate lectures in the opera house. They can hardly, therefore, be fully understood out of their connection with the lectures which they were designed to illustrate. The main object of the lecturer was to show the presence of law in all the parts of language, and especially to illustrate the value of the historical study of language, not only for its own sake, but as throwing light upon the forms and usages of the present. With this view, he dwelt especially upon the so called irregularities of form, choosing the noun as the simplest part of speech for his purposes. His effort was to exhibit to teachers the historical and philosophical foundation of grammar and to increase their interest and success in the teaching of English by suggesting to them higher views of the true dignity of grammatical science and by leading them to larger study of the history and growth of the language.

Geography.—The work taken up by the classes in geography was the practical study of map drawing, and the results achieved there were very remarkable. The aim was to show how map drawing should be taught, and included the necessary practice in the use of construction lines and the manipulation of the materials used in drawing and coloring. The map of North America was the one in connection with which this instruction was given. The plan of the work in this study was entirely Mr. Riemann's.

Singing.—Instruction in singing consisted almost entirely of vocal exercises at the beginning of the morning sessions and in incidental explanations. Loomis's Steps in Music were used, together with written exercises.

Reading.—In an introductory lecture the importance of this study was set forth. The following are some of the leading points of the lecture: Reading trains the mind; it offers the means of acquiring knowledge; it is a never failing source of pleasure; it gives a better knowledge of language than can be obtained in any other way. Language, however, is the surest means of cultivating thought; in it alone thought can become strong and develop its power. Language stands in a certain ratio to intellectual strength. The child has a vocabulary of perhaps 300 words; Shakespeare had one of 15,000. Reading is the gateway to mental wealth; through it the human being arrives at more perfect language, and mediately at more perfect thought, feeling, and will.

The practical methods of teaching reading to children formed the subject of other lectures. Three processes were recognized in teaching it. There is the mechanical element, which is the teaching of the correct pronunciation of the characters; then there is the logical element, which deals with the thoughts contained in the reading lesson; and, lastly, the æsthetic element, which requires good and beautiful expression in reading. At a later time of the course, applied methods of teaching reading were taken up by the institute. Among the methods considered were the alphabetic or A B C method, which begins instruction by teaching the names of the letters; the word method, which considers the whole word together as a kind of word picture; and the so called phonic and phonetic methods. The former of these two uses the ordinary type in teaching reading, beginning with the sounds of the letters, while the latter teaches the sounds from phonetic type. The relative advantages of all these methods were considered and their application in the class room shown. The greater part of the time was spent in practical drill, showing how the reading books used in the schools of the State may be used to best advantage. The series considered were Walker, Evans & Cogswell's Readers and Appleton's series. It was endeavored to impress upon the students that mere mechanical instruction in reading is not sufficient, that the contents of the pieces should be made serviceable to train the feelings and thoughts of the children.

Another series of lessons was given on the subject of teaching grammar in connection with the reading lesson. Reading is the principal means of cultivating language. Hence the child's reader should be made the basis for grammatical instruction. The way in which the reading book might be utilized for such purpose was demonstrated practically. The general drift of the lessons is shown by the following report, written by one of the students and published in some of the papers of the State (Charleston News and Courier, August 21, Southern Educational Monthly, September, 1880), of which report I shall take the liberty to make extensive use in the following pages, with but a few changes and additions.

Reading lesson.—The subject was "The Sword" (Reynolds's Fifth Reader). One stanza was read by each pupil; then the whole poem read by one.

Question. What grammatical exercises may be given to a class in connection with such a piece?

Answer. Let the pupils select and copy the nouns. Select the subjects of the sentences, &c. Inference: Grammar may and should be taught in connection with reading. Technical grammar alone, separated from reading, is not the best way in which a child should begin the study of grammar, for grammar is a collection of rules. Rules, however, are summed up experience, and should, therefore, be preceded by it. Many of the new good text books in arithmetic treat of the subject first, and then, after the pupils have some experience in it, the rules and definitions are given at the end of the section.

In a similar way the child should gather what may be called grammatical experience by the analysis of pieces in the readers, and this exercise should precede formal grammatical instruction. The advantages of making the reading lesson a lesson in grammar are, in brief: The pupil is compelled to read the piece frequently when he analyzes its sentences; by this repetition pupils gain a wider range of words. It helps the pupil to remember the words used in the lesson. It fixes the meaning of the lesson better in the pupil's mind. Language lessons may be made written exercises, and thus elementary practice in writing compositions is given. It teaches grammatical knowledge by means of object lessons, for language itself is in this process made the object from which grammar is learned, &c.

The following advice was given to the teachers in regard to this study:

In practical reading, the mechanical element should receive attention first. Drill in this. It is preparatory to other elements. Master lower books fully before you proceed to higher ones. Premature promotion is injurious to the pupil. The young mind delights in repetition. A child likes to hear the same story over and over. Nothing is more detrimental than to give work you will not require to be recited. It weakens the sense of responsibility. That the pupils read a lesson well in class is no test of preparation. To ascertain how much a pupil knows of a lesson, ask questions about its contents. Questions may be reproductive, like those which require simple repetition of the words of the book, or they may be productive and require inferences from the statements of the book. With beginners ask reproductive questions chiefly.

Do not interrupt the pupil while reading, to correct an error. It interferes with expression. Wait for the end of the sentence or paragraph. A scholar cannot read well while expecting to be corrected at every mistake.

Do not talk too much about lessons in the first and second readers. Here use all the time, or most of it, to overcome the mechanical difficulties of reading. These lessons are too simple to need explanation and there is little to be gained by talking about things so well understood.

Little noise and much work, should be the motto in the school room. A signal secures often more prompt obedience than a spoken command.

Do not allow pupils to raise hands at errors. It disturbs the pupil who is reading and dissipates his attention. Let them wait to be called on. Reading by individuals is best. Introduce concert reading to vary the exercises; it is a good device, provided that the teacher has the class well in hand. Do not allow pupils to speak loudly during such an exercise. You can distinguish voices better in low tones. Many pupils reading together in loud tone make too much noise.

The following was suggested as a feasible plan for a reading lesson in higher grades:

1. Read the lesson.

2. Discuss and explain. Always attempt to draw the explanation from children by questions, because it makes them self active, because a child can explain to a child better than an older person can. This must be effected by questioning the class, not by lecturing. Do not spend time on what you imagine a pupil knows already.

3. Ask questions about contents of the piece. (*a*) Ask questions requiring a simple exercise of the memory. These may be called reproductive questions. (*b*) Ask questions requiring logical thought on the part of the pupil. These may be called productive questions. At times it is useful to put puzzling questions.

4. Require the pupils to relate the story in their own words. This exercise teaches quickness of movement and accuracy in the reading, because they learn to read in such a way as to remember the meaning. It requires concentration of all powers. Not much time can be occupied in this way at every recitation. Keep all exercises in proper limit. Do not let them crowd out practical reading, to which most of the time should be given.

5. Make the reading lesson an exercise in grammar. Let the pupil write parts of speech found in the lesson. Advantages of this exercise are (1) gain of grammatical connection with language; (2) rules of grammar mean more when applied to written than to spoken language; (3) writing parts of speech helps to understand them in reading; (4) in preparing the exercise in grammar the pupil unconsciously learns to read better and with greater attention.

On account of the influence which reading has on the vocal organs, it may, in one sense, be considered from the standpoint of physical education, and, in this respect, takes rank with the other so called general exercises. These consist of concert reading, calisthenics, singing, &c., and are beneficial for several reasons: (1) As physical exercises. The lungs are strengthened and the circulation of blood invigorated. Hence, health is promoted. (2) Voice culture. By strengthening the lungs the tone and power of the voice are improved. The muscles of the throat are exercised. (3) They give will training. The class learn to subordinate their special will to authority and learn to act in harmony with others. This enables the teacher to retain control of the class. Troublesome pupils often are best governed by these general exercises. The will of the teacher finds expression in uniform action. This trains the pupil's will. The index of the discipline of the school is the willingness of the pupils to yield their caprices to rational authority.

Class lectures on the science of education.— The scope of these lectures was, in brief, as follows:

An explanation was given of the psychological laws of childhood, with especial reference to the laws of memory. Leading reference books and sources of information were mentioned throughout the course in connection with the several topics, so that the teachers would be enabled to obtain further information on the subject if they desired to study it at some future time. The general idea of methods of teaching was discussed, and it was shown that a method is the adaptation of the science to the laws under which the young mind can acquire knowledge. While scientific presentation of the subject matter takes place in logical order, without regard to the difficulty of the several parts, methodical presentation takes place in psychological order, or in the order in which the young mind can alone acquire knowledge; the easiest part is placed first.

The aim of teaching music in the common schools was touched upon. It has been mentioned that it may be considered physical training, in the first place, affecting the vocal organs. This is certainly important; but there are higher advantages in this study. It trains the emotional nature of man: the heart requires culture as well as the intellect. It is a great aid to discipline, and, like the other general exercises, helps the teacher to control the class in a gentle way, because, in the first place, the pupils like music; they enjoy it, and they must, in an external way, conform with the will of the teacher who leads the singing.

Lectures on the topics above set forth formed the work of the first week of the institute in the study named. During the second week the methods of teaching reading, described before, were discussed. In the third week the subject of teaching arithmetic was presented, especially in reference to the lowest grades, and several methods of instruction were explained. The first lectures exhibited the general principles of lessons in arithmetic. This is an outline of the topics:

We can see in all objects two elements: (1) A quantitative element, such as number, extent, form, &c., with which mathematics deals. Quantitative truths are the aim of mathematics. (2) A qualitative element, distinguishing characteristics, such as form, color, &c.

In the order of studies arithmetic ranks second to language only. Instruction in arithmetic differs from instruction in other sciences. Arithmetic calls for the process and discards the subject matter. We do not expect the child to remember the example itself, but the process. Every problem requires for its solution a logical and a mechanical process. The logical is the more difficult process. The logical process reveals the mode in which the mechanical processes should be used. Analysis is required for the separation of the quantitative and qualitative elements in a problem. Arithmetic requires abstraction. It demands continuity of the reasoning process. Other sciences require more simple judgments. In mathematical reasoning all steps are connected and dependent. If one step is wrong, all is wrong. A mistake interferes with the logical correctness of the whole.

Continuity of reason demands attention, and, therefore, arithmetic. Arithmetic trains attention more than any other study. Attention strengthens the will, and, for this reason, arithmetic is of the highest practical value, since it is connected with will training. The mechanical element (for instance, readiness and skill in the use of the tables) is necessary and should be mastered fully. There is no royal road to its mastery. The mechanical part of the work should be automatic. It should require no slow reasoning. It is learned by drill. It forms a small but *essential* part in the work of arithmetic. The logical process is, however, the more difficult, and needs more training. This is shown by the fact that children try to shirk it by sometimes asking when a new example is given to them, "Must I divide or multiply first?" Perception, by the use of objects, should precede mechanical drill. In the lowest grades always consider both processes. It is not right to begin with the mechanical process, because you slight part of your work, that which involves logical training. In primary instruction use objects to arrive at abstractions. Aim at abstract knowledge in order to apply it to examples.

The order of teaching the elements of arithmetic is (1) perception, (2) abstraction, (3) application. Perception is important. Teaching must proceed in accordance with the mental organization of the child. A child learns more quickly and thoroughly through his senses. Hence teach by objects. In higher grades or with older pupils, you may lay stress on deductive reasoning.

Avoid too many questions; proceed slowly. Do not undertake too many things at a time. Make first lessons in arithmetic also lessons in language; do not assume that children know a lesson, unless they can express their knowledge. Do not ask little children if they understand. Find out in some other way, by asking them to explain, &c. Such questions as "Do you all understand?" are only applicable to the higher grades. In asking questions, the name of the pupil should follow, not precede, the question, in order to secure the attention of the whole class. Keep the class active. Let each individual get the benefit of the hour by making your instruction class instruction, as much as can be done. If you have sixty pupils in your room and each studies in another part of the book and recites by himself, each child gets but a minute of your time each hour; if you divide them into classes that recite together, so that while one recites the others pay attention, each child gets a whole hour of your time and attention.

Illustrations are necessary in preparatory work in arithmetic. Put something in the hands of the child to count. The hand is an important factor in the work of instruction. Make the lesson also a lesson in writing. Insist on the figures being made well; it will help to make the work clearer and more correct.

The last week of the session was set apart for lectures on school discipline, most of the time being given to the topics school punishment and its educational aspect, motives and incentives in school work, the marking of recitations, and the influence of the "per cent. system" on the character of the pupils. It was shown that those systems of discipline are the best which place the motive power of the pupil's actions in his own sense of right, so that the effects of discipline may last after the pupil has left school. The aim should be to train the pupil to self control. The power of the teacher's example was dwelt upon, and the maxim was advanced: "Be yourself what you wish your pupils to be; that is the true way to their improvement."

The object of discipline is a wise self control secured by a proper self knowledge. It aims (1) to place in the breast of the pupil a force which will guide him aright; (2) to educate the conscience; (3) to plant noble motives; (4) to stir up a manly or womanly desire to excel. That discipline which requires constant watching is not good. Discipline may be secured by external force; the animal is made to submit to it. Rational education should secure discipline by appealing to an internal force, the conscience and good will of the pupil. It should place within the pupil a wish to do what is right and good. There is a certain voice in every heart which the influence of good training may arouse. True discipline depends on conscience. True and right motives are internal. Avoid all methods that lose their power when the pupil is not watched. A method whose sole mode of discipline is watching and reporting at the end of the week is wrong, because it does not strengthen moral power. It implants in the pupil no good impulse and rouses no effort to do right, no longing for a nobler life. It shields from temptation without preparing the child to meet it. It weakens the will by preventing its exercise. True discipline cultivates will power. It gives strength to resist wrong and to do right because it is right. It prepares for life's emergencies. It teaches to control self. Teach by precept and example! The teacher's example is the great source of power in discipline; his personality is. When you teach a child to sit still, you begin to teach humanity and civilization; for he learns the lesson that he must not do what he likes, but what is right; he learns to control his actions and impulses and to subject them to law. He learns concentration of will. Without control over thought or will, we are just a little akin to the brute. "Self reverence, self knowledge, self control, lead life to sovereign power." Pupils imitate the teacher's ways unconsciously. That which is not taught by example is hardly taught. Respect your pupils; respect their rights and their feelings. Use kindness and gentleness toward all. A child has keen judgment and will feel deeply any lack of respect. Be kind, to make pupils kind. Your expressions teach them. They are mirrors of the teacher. Put in your life what you want them to be. If you desire them to be patient, let your patience be infinite. Have large charity. Be punctual. Insist on obedience. Do not tire of repetition. It is the teacher's office to be patient. Try hard. Remember that a great deal of annoyance is inevitable. You are not qualified to be a teacher if your temper is so irritable that you cannot bear it pleasantly.

A philosopher has said that the aim of education is to make man ethical. The family, the state, and society are ethical institutions. Education prepares for membership of all these. Family training is individual, but the State requires also qualities for membership in a community. The school is between these. Here the child meets his equals and learns how to act in the intercourse with other individualities. The school takes the individuality of family training and educates it to adjust itself to the requirements of the state. For this reason tutorship is not equal to school training. This training requires that the pupils should work in classes. Classification saves time and creates generous rivalry.

A motive is a power within us depending on our will, appealing to it, and governing action. It is spontaneous. An incentive is an external influence, something appealing to the will and coaxing it from without. The highest motive to exertion is a sense of duty. Duty and love are the brightest motives. All others may be termed doubtful. Emulation and ambition, when they take the form of a wish to excel, may be used. When they become a spirit of rivalry, they are wrong. Cultivate a strong sense of duty and a spirit of love. These will go with the pupil when he leaves the school room. They will be ever present influences to incite to right action. Duty as a mere word, that dwells on the lips, is a poor thing. To be a vital power, it must be a reverenced principle.

There is no system of discipline which should not be sacrificed to destroy rivalry. This is a great evil. Do not tolerate it. Some methods of discipline cherish it. You announce to a pupil that his mark or standing is 97 per cent. This has no meaning, can have none until a meaning is forced upon it. No one marked lower than this rejoices in his success; if others are marked higher, he takes no pleasure in their success. A teacher may use a system of marks, but it is better not to attempt to announce a pupil's standing in figures. On his record let all pupils above a certain mark be announced as excellent students. They all rejoice in the announcement. But this joy in each other's success is lost and gives way to envy when such close distinctions are made and each pupil receives a separate mark. The use of medals and prizes is of doubtful propriety. A large number of educators use these, and their opinions are entitled to respect. There are two kinds of success: objective and subjective. A pupil obtains objective success when he masters more than others. It may be in consequence of possessing greater capacity. Subjective success arises from doing all the pupil has the power to do. One is an expression of the relation of the amount of work done by a pupil and that done by his fellow pupils. The other is the expression of the relation of the work done by a pupil and the work he had the capacity to do. Medals and prizes reward objective success, but the truest success is subjective. According to systems of awarding medals this success often goes unrewarded. A sense of injustice is the result. In striving for these a spirit of rivalry is engendered. From this springs at times hatred extending through a lifetime.

Merits are inferior incentives and open to serious objections. They soon lose their value, but they are better than fear, which may possibly give a new moral life, but it is more apt to destroy it. A school controlled by fear is the worst place for scholar and for teacher. Don't control by fear; control by love, the daughter of heaven. Fear finds an echo in the evil passions that arise in the young soul, but a thousand voices in the mind of the child answer to love. Yet the pupil, if necessary, must be compelled to do right. Control by any means rather than abandon pupils to an objectionable life. No rule will work well unless used by a teacher possessing common sense.

A teacher must make his instruction a fitting preparation for the work of discipline. Learn to make work interesting. You can control pupils by making your own mind better. Never allow a day to pass without making your own soul deeper, better, richer. No work can be so arduous as to debar you from self improvement. Persistent effort, however small, will improve you. You may possibly work under adverse circumstances. Read for five minutes every day in some good book, if you have absolutely no time to do more; but let it be a regular habit. Let every day add something to your mental strength; this may not require much time, but it will require persistent work. If your preparation is thorough, pupils will look up to you and try to follow your example. They will be inspired with confidence. To the pupil's mind and eye the teacher's soul should be like the blue dome above, clear and endless as far as the eye can see. By thorough preparation make yourself worthy of respect. It is a noble feeling to look back on a day and be able to say, I believe I have done something to make my pupils better. Fröbel said: "Come, let us live for our children." Let it be ours to live for others. You have it in your power to make school a place of great moral influence. Let its atmosphere be pure and serene. A successful teacher rules the pupil only so far as he is able to rule himself. Train pupils so that when they leave school they possess earnestness and the will to do right. It is a poor school that has good order when the teacher is present and bad order when he is absent. It is dangerous and pernicious to appeal to force constantly in governing a school. Make external incentives pass into higher motives. The teacher is responsible for making work interesting, for pleasant feelings in the school room, and for devising training that is adequate to pupils' powers. A child enjoys effort, not overwork. There may be hindrances to success in teaching in your manner. You may speak in a monotonous or too loud a tone. Some teachers easily gain the confidence of scholars and attract them at once; others repel. Be kind. Let your kindness be as great as our finite nature will permit. Be firm in what you want. Be firm in requiring work that must be done. Remember, however, the expression of George Eliot, "Dear blunderers, I am one of you." All may improve their school by improving self. A harsh word in a well tuned school is a discord. There are inclinations in every human being that need correction. Reprimand should be brief. As a rule, scolding is unwise. Punishment should not be simply retributive, and look at the past offence, but, like the head of Janus, it should also look toward the future. To say "I'll whip you next time" is foolish. You give up your right to judge of a case on its individual merits; you surrender your freedom of action.

The true idea of school discipline is to make a pupil do right because he loves to do so. Train a pupil so that when he leaves home and school his conscience will take the place of teacher and parent. A well managed school appeals to the judgment of the pupil.

Incidental instruction was given on the subjects mentioned; in addition to this, questions asked by the students were answered and discussed. The following are some of the topics touched upon in this way, as I find them in the notes referred to above. They are given here as topics, without any attempt at arrangement. The object is simply to show the scope of the discussions: "Teaching of detached facts should be avoided. Create the feeling of responsibility in your pupils. Let the pupils write slowly and carefully, for this trains habits of carefulness. What the hand does is impressed upon the mind; writing, therefore, aids the memory. In education the necessary should precede the ornamental; teach the most valuable thing first. Begin instruction in writing by teaching the child to write his own name, for you do not know how long he will stay in school. Those who remain the shortest time need knowledge most. Whatever must be unlearned again at some future time should not be taught; therefore, do not teach the pupil to 'print.' Young minds delight in repetition: children like to hear a story told again and again; this is an indication of their minds. We all learn by repetition; do not tire, therefore, in repeating your instruction, when you see that it is necessary. The humblest in the class has rights which the teacher is bound to respect."

On Thursday of the last week, Prof. N. F. Walker, principal of the institute for the deaf-mutes and the blind of the State, assisted by some of his teachers and pupils, gave a most interesting and instructive exhibition of the methods of teaching followed in the excellent institution over which he presides, which was witnessed with great interest by a large audience.

Public lectures.—Your arrangement included also a series of public lectures to be delivered in the opera house of Spartanburg. The object of this arrangement was to interest the public at large and to make them participants in the work of the institute and sharers of its profits. The lectures began during the second week of the institute and were well attended by both students and the public. During some of them the whole house was filled, more than six hundred persons being present.

The course was opened by a series of lectures on English language, delivered by Prof. E. S. Joynes, of Knoxville University, Tennessee, which attracted general attention by the remarkable brilliancy, depth of thought, and the great erudition which they displayed. I am confident that they did much to stimulate the teachers to future work in this most important study. In the following I quote from some of the reports on these exceedingly able lectures, knowing how little anything short of a *full* report (which I cannot give here) can do justice to them.

The first topic of the earliest lecture was the controlling influence of our language. It is our mother tongue; we are born of it, grow in it, live and move in it. It furnishes the type, mode, and form of all our intellectual operations. It also controls our feelings. "Who loves his mother tongue will love his fatherland." English is to-day the most commanding language in the world; its history is the most wonderful; its career the most remarkable; it is the embodiment of the greatest literature; it is characteristically like the race which speaks it. It is a composite language; its basis was a dialect of German; it was modified by Norman French and amplified by copious selections from the Latin and Greek. The two last named languages added the treasures of antiquity, but are not the basis of English. All these elements being cast into the mould produced a new language. The study of no other language throws so great a light on the history of the race. Its grammar contains the history of a people. No other language lends itself so readily to the translation of other languages. No other can be studied with so great advantages for educational purposes. In its vocabulary the English language is eclectic; it is not an agglomeration, but a stratification of other languages. Thus the German furnished words expressing the feelings and emotions; the French contributed the language of courtesy and chivalry; the Latin supplied words expressing administrative and intellectual processes, while the Greek added our scientific terms. Further, these various sources of words gave us a rich store of synonymes, each with a peculiar shade of meaning. Each gift added richness and variety in points of diction and style. But our language has not only added these terms, it has absorbed and assimilated them. It has gathered threads from many sources, but the warp and woof are English. Many striking instances were given of the process which words from other languages undergo. Very characteristic of the controlling influence of English is its change in the accent of foreign words. The alteration of plural forms is another change which such words undergo in the process of assimilation, e. g., cherubim and seraphim. And as foreign words after adoption lose their former characteristics and become simply part of our own language, so it is with people of foreign birth who visit our shores: their identity is lost and they become American citizens. Thus is the genius of our language and of the people one and the same.

In another lecture the grammatical characteristics of the English language were considered. The simplicity of its grammatical forms was exhibited, resulting from the loss of inflections, due to historical causes, and giving a peculiarly logical character to the elements of the English grammar. Next was considered the development of analytical forms, auxiliaries, &c., as contrasted with the synthetic or inflectional forms of the two classical languages. It was thus shown that English was the most perfect type of modern development in languages, and most strongly contrasted with the ancient type as exemplified in Greek and Latin. In this lies the peculiar contrast between Greek and Latin and English and the value of classical study as an aid to English scholarship. The lecture concluded with the consideration of the idiomatic character of English as a result of the loss of grammatical forms, showing these idioms to be one of the most peculiar and expressive characteristics of the language. As in the previous lecture, all these topics were treated in the light of history, as the result of distinct historical influences and as indicating the distinctive growth and development of language according to its own laws.

The last lecture treated of the logical, literary, and practical characteristics of the English language, among which were mentioned and illustrated clearness, force, brevity, and simplicity of structure. In literature, by means of the characteristics of the English language, the development of the highest form in every department of letters was achieved, showing the peculiar fitness of English to be the vehicle of modern thought. In its practical character lies the secret of its adaptation to the present age, as the language of common sense, of precision, facility, and rapidity, fitted to be the companion of the railroad and telegraph in the ministry of modern life and civilization. These facts account for the wonderful growth and diffusion of English, its probable destiny, its mission of civilization and christianity, as shown in its characteristics and powers. It is a privilege, not without responsibilities, to have been born to the inheritance of such a mother tongue.

The lectures of the third week of the institute were as follows: Rev. J. R. Riley, president of Adger College: "The right education and the connection of the teacher therewith." Rev. W. M. Grier, of Erskine College: "The work of the teacher in the formation of character." Prof. S. P. Sanford, of Mercer University, Georgia: "The history of arithmetic." Prof. E. S. Joynes, of University of Tennessee: "General Lee as a college president." Hon. Gustavus J. Orr, State school commissioner of Georgia: "Education of the negro." A series of afternoon lectures on experimental physics was delivered by Prof. D. A. DuPré, of Wofford College, which attracted numerous classes of students.

During the fourth week Prof. Kemp P. Battle, of the University of North Carolina, lectured on the subject of the "Importance of education, especially to farmers."

Dr. Carlisle delivered a lecture of such great force and deep meaning that I may be allowed to quote the following report of some of its points:

Dr. Carlisle began by stating that two or three attempts had been made in this State to establish a teachers' association. In 1850, by a singular coincidence, a State teachers' association was formed and a society for the importation and raising of Shanghai chickens. Strange to say, the latter outlived the former by several years. This is the first time in the history of our State when one hundred and fifty teachers have met under the same roof. He would make two appeals to the teachers assembled. First, remember the great importance of incident teaching. Do not confine yourselves to set lessons and formal tasks. Be ready at all times to take up incidents of daily life, such as draw the attention of the world and such as pass unnoticed by the ordinary observer. Bring these into the school room. It is not $20 a month you are working for; but once having settled the question of what you wish to do in life, you must then throw all the energies of your mind, soul, and body into your duties. Some one has well said, "Crowd life with good works until they run over the brim." So the teacher must crowd the little school room with good works until even the dullest pupil feels the influence. When a visitor spoke to Sir John Herschel of the sublime sights he had the privilege of witnessing every night, our astronomer replied that all this had become commonplace and, to him, the dullest kind of prose. This would do when one looked out at the stars, but no teacher could regard twenty or thirty children, with minds to be developed and immortal souls to be trained, as commonplace. The common children—and the great majority were only common—demanded the utmost care and thought of the teacher. In using the various incidents in the school room the teacher should be careful not to neglect the text books. Be sure never to wander from the formal lesson unless you wander to something better. At the close of each day call the school together, and by some of this incident teaching let the school room be bathed in a flood of sentiment.

The second appeal was to remember the importance of unconscious teaching. When one stood in the light of the sun his body would cast a shadow. This could not be prevented. So the teacher's shadow followed him in school and out of school. When he was directing all his attention to a boy in the class, some little fellow in the rear was also getting a very important lesson from his tone and gesture or apparel.

A high tribute was then paid to the female teachers. With tenderness and sympathy their work was described, their burden, their silent sufferings, alluded to. No teacher should settle down to self complacent satisfaction with his work. An artist was asked which was his best work. He replied, "The next one." So the teacher should never be satisfied with his work. Each one should leave the institute fully assured that the next school was to be his best.

The last lecture in the course was delivered by the principal on the subject "Small causes, great effects."

Attendance.—The attendance at the institute was remarkably good, increasing in numbers in the course of the first three weeks of the session, instead of declining. While at the first meeting the attendance, both of students and visitors, was about 95, it rose to above 250 students and visitors during the morning sessions, and was certainly not less than 600 during some of the evening lectures. The number of students enrolled was 197.

The list shows that the whole State was represented in the institute and profited by the work. But this exhibit, gratifying as it is, does not tell all; it may not be inappropriate to add a few words to supplement it. The list gives the names only, and does not contain any information in regard to the character and composition of attendance. I believe that all classes of teachers were among the students. Every age was represented in the institute, from the young man fresh from college, who has just made up his mind to teach, and the girl who enjoys the enviable privilege to be still able to grow mentally and physically with the pupils over whom she is placed as a teacher, to the gray haired gentleman who has seen fifty years of active service in the cause, and the old lady, always interested, never absent, never remiss in her duties, whose hand guides her pencil quickly but tremblingly over the pages of her note book, but who finds it difficult to keep step with her younger classmates on their way to the recitation room.

As all ages were represented, so almost all the grades of scholarship were to be found among its students. Most of them were teachers holding a first grade certificate; this shows that those who are most advanced are ever most ready to increase their learning, because they can appreciate the value of knowledge; but there were others represented as well who stood lower down in the scale of learning, differing from their classmates perhaps in the fulness of their information, but not in the zeal and eagerness with which they availed themselves of the opportunities to learn. Most of the persons of regular audiences were teachers, as far as I know, but not a few of those who were engaged in other callings were also present and seemed interested enough to take part in the work. Clergymen, lawyers, editors, merchants, farmers, college professors, were there. Men whose names are identified with all that is good in the educational history of the State honored the institute by their daily presence and thus lent their valuable encouragement to the enterprise. Visitors came from other towns, attracted by the reports of the institute. A few of the teachers, who had intended to spend but a few days at Spartanburg, changed their intention after becoming acquainted with the doings of the institute and remained until its close. Some of the teachers paid a substitute out their own slender salary to keep school for them during their absence, so that they could attend the meetings of the institute until its close. Others who were compelled to leave before the last week tried to find substitutes to take their places, so that they might return and remain to the close of the session.

The leading papers of the State sent representatives and published regular correspondences about the meetings of the institute. This new feature in the educational history of South Carolina attracted attention everywhere, in the State and out of it; and many of the teachers that had not been able to attend this time communicated their resolution to participate next summer if the opportunity should offer itself again.

I believe there is no reasonable doubt that the institute has accomplished all that it undertook to do. It has given hundreds of teachers an impulse to do the best in their power to make their schools better and to utilize practically the improved methods of teaching presented in the institute. They resolved, to use the words of one of the lecturers, to make their next school the best they ever taught.

The attention of the people of the State was drawn towards education; the leading papers made the institute the subject of discussion and comment. The schools of the State were improved, for the teachers returned to their duties better qualified to serve in their noble work. On the other hand, it must not be forgotten that such animating impulses and new impressions, invaluable as they are at the time, will not last unless they are repeated. The results of the most arduous work of the greatest efforts are but transitory, unless these efforts are continued. The first institute was a good beginning, very creditable to the teachers of the State of South Carolina, but it was a beginning only. To make its work lastingly useful, normal institutes should be made a permanent part of the educational institutions of the State and be repeated every summer. It remains with the wisdom of the legislature to provide for the fitting continuation of this good work.

In conclusion, allow me to thank you, sir, for the encouragement which your presence during the whole time of the institute, your ever ready helpfulness in difficulties, your invaluable advice in the work, have given to all connected with the institute. Let me also thank my colaborers, Profs. H. P. Archer, E. W. Riemann, R. Means Davis, E. S. Joynes, A. T. Peete. To them all the success which has attended the labors of the institute is due. I feel how little I have been able to do for it if I look at their labors. My association with them was most pleasant and profitable, and the meetings of the faculty will ever be cherished recollections for me. To the citizens of Spartanburg, to the clergymen, to the editors of the papers, and especially to Professor Petty, to Dr. J. H. Carlisle, Rev. Whiteford Smith, Rev. J. T. Wightman, and many others, I wish to tender my best thanks for their kind assistance and support in the work of the institute. Nor can I let this opportunity pass without expressing my deeply felt appreciation of the never flagging zeal and interest, the never tiring attention and industry exhibited by my fellow teachers, whom I had the good fortune to call my pupils for a short time. Their enthusiasm, their readiness to appreciate the endeavors of their teachers, formed in itself the best and most ample reward for the little I have been able to do for them.

All of which is respectfully submitted.

II.—REPORT OF THE NORMAL INSTITUTE OF SOUTH CAROLINA FOR 1881.

By Prof. L. F. SOLDAN, *Principal.*

The aim of the normal institute is to assemble the teachers of the State during the summer and to impart such instruction to them as will enable them to do more and more efficient work in their schools at home.

Time and place.—The institute began on the 2d day of August and lasted four weeks; the place selected for it this year was Greenville. While no one connected with the institute of 1880 could have forgotten the encouraging support which the institute experienced in Spartanburg and the noble hospitality of its citizens, it appeared best to change the location of the institute from time to time; so as to bring its work to the more immediate notice of the several sections of the State. Greenville offered many attractions to the teachers. Its well known, pleasant location and its facilities of railroad communication made it a desirable place for the institute.

The faculty of Furman University and of the Baptist Female College generously offered the free use of their buildings.

Attendance.—The attendance of the institute was so large and so satisfactory in regard to regularity that it surpassed the expectations even of those who were most favorably impressed with the results of last year's experiment, and therefore predicted an increased attendance for this.

There were 335 students enrolled: almost all the counties in the State were represented. Whatever good was accomplished, there can be no doubt that it will spread its results all over the State and benefit every county. The attendance was excellent all through the session. There were 270 persons present during several of the morning lectures of even the last week.

Usefulness of the institute.—While only about 300 teachers attended at any one time, this number does not give any adequate idea of the influence which such an institute exerts on the educational interests of the whole State. The trouble which the organization of the institute imposed upon you, the time which you gave to it by being present at its meetings, the considerable amount of labor which it added to your official duties, will be amply rewarded by the great and obviously good effect these institutes have had on the growth of education in South Carolina.

The importance of the work will perhaps be better understood by all when it is known that the students of the institute, taking the actual number as stated by them, had charge of the education of an aggregate of about 15,000 children, or of nearly one-fourth of the white children of the State who are attending school.

The good done by an institute of this kind will redound to the benefit of the State, for it is the only way in which the State can secure the end that the money which is spent for education is well spent.

It cannot be too strongly emphasized that normal institutes are maintained for the benefit of the children of the State, not for the personal benefit of the teachers who attend them. The teachers are not benefited by them personally, but professionally.

As to the value of the institute instruction for the teachers who attended it as students, they themselves ought to be the best judges.

They witnessed the work of last year's institute at Spartanburg every day. They tried the suggestion taught by its lectures practically during many months in their own schools. Aside from the enthusiastic acknowledgment of the value of the institute for their own work, which so many teachers volunteered in letters and conversations, there can be no better testimonial for the efficiency of your plan for holding normal institutes in your State than the large number of teachers who attended the Spartanburg normal institute last year and who came back this year, bringing with them friends. Their good reports of the benefits derived induced many of their fellow teachers to join the institute at Greenville last summer.

The teachers (who ought to be the best judges of the value of institute training) expressed their opinion as to its value for their schools by their numerous attendance. While on one hand the State has nobly given its support to this great educational force by establishing the institute and furnishing the means, the teachers, on the other hand, have done no less. The money spent by each of the 335 teachers, to enable him to attend the institute, will amount in the aggregate to more than four times the liberal grant of the State. The teachers responded to the noble attempt of the State at elevating the educational interests by lending their own time, money, and energy to the enterprise.

Under these circumstances it was not surprising to see that the very best class of the teachers of the State had sent numerous representatives to the institute. I cannot speak too highly of the teachers whom I had the pleasure to instruct in Greenville. All seemed to be in earnest, all seemed to be eager to profit by the instruction given; and I look back with grateful feeling upon the time when it was my privilege to be associated with my fellow teachers in a work of school improvement the importance of which all of us felt. I take this opportunity of expressing my heartfelt thanks to those who attended the institute for the many acts of kindness to my associates and to myself, for the energy which the students showed in the work, and for their sympathetic appreciation of the labors of the institute. The success of the institute is in no small degree due to the encouragement which those who taught the institute found in the faithful work of their hearers, in their great zeal and intelligence.

There are many ways in which the work of an institute can help to develop the educational resources of a State. The true road to the improvement of the common schools is to improve the teachers. It is wise economy for the State to support the endeavors of the teachers to learn improved methods of teaching. Every cent spent on the education of one teacher is spent for the improvement of the instruction of sixty children. The moment a school is taught by a better teacher it is a better school. The success of teaching depends, in the first place, on the skill of the teacher. There is no kind of activity so utterly dependent on the personal qualifications as teaching.

The special advantages of institutes are:

Normal institutes are an incentive to teachers to rival with the best teachers they have met in their work in future.

Good methods of teaching are communicated to each teacher present by personal contact with others who have used these methods with advantage and who give others the benefit of their experience. The best methods of teaching the common school branches are explained by those instructors of the institute who have made the study of methods a specialty and who keep themselves informed in regard to all progress made in the science and art of education; thus the recent results of educational science are brought to the notice of every teacher.

Methods of school management and of keeping discipline are made the subjects of lectures. The normal institute leads to an exchange of opinion among the teachers attending it. The most humane methods of discipline, the modes of school management used by the best teachers, are communicated to all the teachers present, supplying them with models according to which they may form their own plans. It makes the best experience of one the common property of all. It relieves them of the necessity of gaining knowledge of the art of education by bungling experiments with their classes, at the expense of the interests of the pupils under their charge, who are the sufferers if they are managed and taught by poor methods.

The normal institute gives an opportunity to the teacher to ask questions concerning the management of his own school and to receive information which is of immediate practical value to him.

The normal institutes give instruction to the teachers in the best ways in which the text books introduced in the schools may be used. Practical exercises in reading, &c., form part of the work of the institute, and the students learn in what manner the time of their pupils may be most profitably employed and how they may be taught in the shortest and most thorough way.

Normal institutes assist the teacher in his endeavors to acquire more knowledge in some of the sciences which he wishes to study for his self improvement. That teacher, all other things being equal, is always the best who continues to remain a student. He alone can sympathize truly with his pupils in their attempts to gain knowledge, for he has experienced the difficulties of the enterprise in his own efforts.

Normal institutes give to the superintendent of instruction an opportunity to come into direct intercourse with the teachers under his charge and to influence them personally in their work at home. It harmonizes instruction in the several parts of the State through the personal contact of the teachers with each other; it gives a preponderance to those methods which are used in sections of the State most advanced in education.

Normal institutes arouse an interest in educational affairs in all the parts of a State. They make people think more about education and are an incitement to educational activity.

Plan of institute work.—The large number of teachers present at the institute and the fact that recitation rooms of adequate size could not be provided for all the classes were sufficient reasons why recitation room work could not be adopted as the plan of the work of the institute. The form of instruction selected was, therefore, almost exclusively that of lectures. There were certain advantages connected with this plan. The presentation of information by lectures before the whole school had a freshness and vigor about it which cannot easily be attained by recitation room work. It compelled each lecturer to give the most thorough preparation to his own department, and at the same time allowed him sufficient time for the most careful arrangement of the lessons of each day.

The following gentlemen formed the corps of instructors: Prof. E. S. Joynes, University of Tennessee; Mr. Henry P. Archer, principal Bennett School in Charleston; Mr. R. Means Davis, Winnsboro'; Mr. E. W. Riemann, of Lexington; Mr. J. S. Perrin, of Abbeville; Mr. W. H. Witherow, of Chester; Mr. W. D. Schoenberg, of

Lexington; Mr. P. B. Kyzer, of North Carolina; Miss M. C. Judson, of Greenville; principal, F. Louis Soldan, principal of the Normal School, St. Louis, Mo.

The following studies were taught: Regular work, science of education and methods of instruction, by the principal; English language, by Professor Joynes; arithmetic, by Messrs. Davis and Riemann; primary methods of instruction and spelling, by Mr. H. P. Archer; geography, by Mr. Perrin.

Optional studies: Penmanship, by Mr. Kyzer; singing, by Mr. Witherow; physical geography, by Mr. Schoenberg; algebra, by Mr. Davis; calisthenics, by Miss Judson; Latin, by Mr. Riemann; French, by Professor Joynes; German, by the principal.

I shall speak below of the lectures delivered which did not form part of the regular course. I submit in the following a brief summary of the work done in the principal studies:

English language.—Prof. Edward S. Joynes, of the University of Tennessee, who had also taken part in the institute in Spartanburg in 1880, was assigned to the important topic of "Instruction in the English language." After a preliminary lecture on "Language in education" and a second on "The mother tongue: its descriptions and uses in education," he proceeded to discuss "The characteristics of the English language as influencing the methods of English teaching." The subject was treated under the several heads of (1) the vocabulary of the English language; (2) its grammatical terms; (3) its sentential structure. All these topics were treated historically, with reference to the origin, growth, and development of the language; and its idiomatic, logical, and literary characteristics were exhibited as the result of historical conditions and influences. The peculiarities of the English language, under these several points of view, were enforced and illustrated; its connection with kindred languages was shown, with an analysis of their respective influences, and from their combination and mutual reaction the distinctive character and genius of the English language were deduced and illustrated. He then passed to the consideration of English grammar, defining the nature, scope, and methods of grammatical study and showing its relations to the dictionary on the one hand and to logic and rhetoric on the other. The subject of "Grammatical method" was treated under the several heads of definition, classification, nomenclature, rules, regularity and irregularity, inflection, confusion and conversion of form, construction, and idiom. These topics as here given can only be suggested; but each was discussed with a fulness of illustration which was at once entertaining and instructive.

The subjects of parsing and analysis were then taken up; their respective methods exhibited; the special importance and discipline of the analytical method, with reference to the English language, was insisted upon, and illustrations were given by parsing and analyzing from the text book (Reid & Kellogg's Higher Lessons). Teachers were invited to submit their difficulties, all of which were fully and frankly discussed. Much interest was aroused in this part of the course, all sorts of questions, "from grave to gay, from lively to severe," being submitted in answer to the professor's invitation. The concluding lecture was devoted to "Constructive grammar, or composition," with remarks on reading and literary culture in schools, the professor regretting that, on account of unexpected interest in the grammatical discussions, so little time had been left for these important subjects. Other interesting topics discussed or suggested by Professor Joynes in the meetings of the institute faculty cannot, unfortunately, be here reported, but were highly prized by the hearers. A fuller record may be given to the public hereafter.

Arithmetic, by Mr. R. Means Davis.—In the first lecture a brief history of arithmetic was given. Different systems in different countries; Roman and Arabic systems compared, to show simplicity of the latter. In subsequent lectures the system of notation and numeration was discussed. Topics touched upon: Periods, considered as units in teaching at first units, units of thousands, units of millions, &c. This is the same as syllabication in orthography. Dwell on importance of drill in this matter, so as to insure correct writing down of numbers on the board.

Addition defined and explained, carrying explained by reference to cash box and making change, ten cents charged for one drum, &c. This is simply reduction, the same as is found afterward in denominate numbers, &c., and the idea should be taught here to impress upon pupils that there is a general plan all through mathematics.

Difficulty of teaching fractions and decimal numbers comes from the fact that not only complex forms are given, but the properties of numbers and principles of mathematics (reduction, &c.) have all to be learned at once, because of neglect of this instruction at beginning, when the forms are simple.

We begin at the right simply for convenience. Could begin at left, but would have to reduce results.

Subtraction, reverse of addition. Some rules and reasoning discussed.

Multiplication defined, &c. How to teach multiplication table by abacus. Table must be learned by drill.

Discussed the rule in Robinson's arithmetic for multiplication. Explanation of what was necessary and what only matters of convenience (e. g., putting units of thousands under units of thousands, &c.). Each step should be taken on blackboard as the rule is recited, so as to explain the rule to the pupils.

Division explained; difficulties of teaching explained. Advised practice on four fundamental rules in conjunction. Long division good, as it embraces other rules.

Proof: Importance of teaching to prove, first, that scholar may become self reliant, and, second, because it gives additional practice (two problems for one given by teacher). Methods of proof explained; "excess of nines" treated of fully and reasons given for rule.

Properties of numbers.

Fractions based on unit, but a fractional unit is generally the base. Fractions defined, &c.

Reducing fractions to whole numbers, and vice versa, should be simple, because the denominator shows the scale. Drill, drill, in fractions, because mathematical reasoning is taught best then.

In fractions complex forms bewilder beginners. Begin by great numbers of simple forms, till the principle is understood. Constant repetition. Try children with reasons as their minds expand. No fixed age for beginning it.

Decimals: In decimals teach decimals, i. e., the placing of the point. Mistake to give long examples which swallow the point in the labor of division. Rather give forty little questions, so the point will be brought into prominence. Give long ones occasionally, to keep up mechanical practice.

Science of education.—There was a daily lecture on the science of education, delivered by the principal. In the following outline of topics extensive use has been made of the notes taken by some of the students of the institute. The topics are alone given and the connecting explanation is omitted, for there is not space enough for fuller statement. The students handed in questions on practical school work, and these were made the subjects of lectures whenever they touched upon a point that was of general interest. The introductory lecture explained the importance of the normal institute for the teachers that were present and the opportunities we offered.

Abstracts of the lectures.—First week: What we learn depends not so much on what is taught as on what we are willing to learn.

The teacher's position, though humble, is important. The generation taught today is the nation of the future. It is the function of a school system to put brain power into a nation.

The raw material of which the work of a watch is composed has little value. The spring as iron is almost valueless. The value of a watch is given to raw material by intelligent work. The brain of man has put its cunning into the metal; and then only became it valuable.

Children are made valuable citizens and good men by the effort of the school to put brain and moral nerve into their life.

The teacher's work is to train the naturalness of childhood into spiritual manhood; out of the animal man grows civilized man.

This is an age of tools. Man's first knowledge of the use of tools marks the beginning of his control over nature. The teacher is a powerful instrumentality. To improve the chief instrumentality means to better the condition of the schools.

Normal institutes are all important. Let one be planted in every educationally dark corner of the land and soon the light of education will shine there. All the States which are eager for general education have normal schools or institutes.

The manner in which it was proposed to conduct the institute was explained. Instruction was to be given: (1) By lectures mainly. Class recitation is not the only successful form of imparting institute instruction. The institute is so very large that classes would be very large also, and many of those present would dislike to recite in the presence of one hundred and fifty strangers. (2) Methods in algebra and arithmetic would be shown by demonstration. (3) By questions and answers.

Instruction would be given in common school branches, both as to the routine work and as to the philosophy of common school work. As teachers, we must understand our work. We must understand not only the subject, but also how to teach it and the reasons for teaching it in this way and no other; hence methods and principles must be studied.

Teachers are required in this institute to study the text books which they are expected to teach and their pupils are expected to study. Is not the teacher above such work? A visitor, surprised to find Grotius reading Terence, inquired, "Do you still read Terence? I thought only boys read Terence." "Boys read Terence one way; Hugo Grotius reads him in a very different way," was the reply. Pupils and teachers may study the same book, but then they study in different ways. Teachers cannot prepare themselves too carefully or too conscientiously for the duties of their calling. We are told that the great writer Harmann, while employed as a teacher, was found walking up and down in his garden reading. When asked what book he was reading, he replied "A primer." Upon the inquirer expressing surprise, he added he would be ashamed to meet his pupils without having looked at their lesson himself.

"In the humblest thing, if the mind seizes it thoroughly, it grasps the whole world," says Goethe. The teacher's calling is among the humblest, but he who puts his whole soul into it does as noble a work for mankind as any that human soul can. Let every teacher work with his whole strength, here and in his school, and he does the best he can for the general good and also for his individual interest.

May each teacher attending the institute remember that it is the duty of each to continue to study and to keep himself fresh. The teacher who is still acquiring knowledge will sympathize with his pupils in their endeavor to learn, and no one can teach well who has lost this sympathy. In one sense all of us go to school forever; life is a school which all must attend. No playing truant there; no shirking of work without punishment. The sense of personal responsibility in the work of training human souls should be sufficient inducement for the teacher to work at his self improvement and to learn while he is teaching. It forms a sufficient motive with the earnest teachers whom the institute has attracted for their presence in a place where teachers are taught. The teacher does not deserve that proud name who is not also a student. Teachers should keep up with science and professional work. Therefore they must attend institutes and read educational books and papers. The session of our institute at Spartanburg in 1880 was a great success, as all will testify who were present. But all of us mean to make this institute still better; we have learned from experience.

The following features have been added to the institute of last year, which form an improvement on it: Penmanship has been added to the course. Map drawing gives place to geography. In the science of language we shall have more of Dr. Joynes's lectures. The study of language ranks first among all the educational work of the common school. No other study can be taught except through language. No problem in arithmetic can be understood unless the language in which it is expressed is understood.

First among professional work, in its value to the teacher, ranks the study of the art and science of education. It forms an important part of the work of this institute. Education is a comparatively young science (and an old art), but one on which the deepest minds have thought and the best writers written. It is a universal science, which is of use to all who share the responsibilities of family life. It is for this reason that the study of the science of education, at least in its leading principles, is useful even to those who do not intend to be school teachers. In a committee report submitted to a department of the National Association at Atlanta recently, it was suggested (1) that a chair of pedagogics be established in every university; (2) that a three-week course in pedagogics be included in all professional education. Men live in families. The family's work is to educate. The members of the family should know something of the principles of the science of education.

Character of science of education.—That knowledge only deserves the name of science which is general in its application and lasting in its result. Whatever knowledge is subject to perpetual change cannot be called a science. Is there a science of education possible? Can any rule of teaching be found which allows of universal application? Is not the watchword that each pupil should be taught according to his own method true, and does it not preclude any science of general methods? They say—and with a show of justice—that schools are but makeshifts, necessary where the family cannot pay for private instruction. In opposition to these assertions, it must be affirmed again and again that there can be no better established truth than that school teaching is in itself superior to individual private instruction. No two minds are alike, it is true. But are any two objects alike in nature? And yet they are all subject to the same general laws. Their leading characteristics, their principal elements are alike. So with the mind.

Individuals differ, yet their leading characteristics are the same. Our modes of thinking differ, yet we all think under the same general laws. The general laws of will and feeling are the same for every human being. Teaching in accordance with the general laws of the mind which all men have in common is perhaps the best way of developing the special individuality. The individuality will grow as the general character is developed. Nine-tenths of the individuality of one pupil is the same as that of others.

School education is the result of the democratic, broad tendencies of our century. In the sense in which we look upon it, it was unknown to the educators of the former centuries. There indeed teaching by tutors was considered the best.

Rousseau, author of Émile, was the greatest writer on theoretical education that ever lived. His ideal was not the school teacher for pupils, but the aristocratic tutor. The ideal of John Locke, who wrote Some Thoughts Concerning Education, was one tutor for one pupil. Pestalozzi was the first to look on school education as the highest form of teaching.

What is the object of education? It is not merely the acquisition of knowledge. Its aim is to prepare pupils for life. The aim of education is not only to teach facts, but to train will and character.

The best education is that which prepares for life, not that which makes the best scholar. Good education strengthens not only the intelligence, but trains character. Character, however, grows only by contact with others, with our equals. "Talent may form itself in retirement and silence, but a character only in life with others." In the family the position of the individual child is unique; the basis of equality is lacking. It is therefore necessary in education that the child should associate early with those of the same age and compete with them in work. He must learn to have intercourse with those that are strangers to him. All this he finds when he is sent to school, and this makes school education indispensable, according to our views. Education in the family is the most important of all, but it needs school education for its complement. Compare life in the family and life in society. In the family no two are equal. All are different. In society we meet our equals.

The association which he forms at school teaches the child to defend his own rights and to respect the rights of others. In school he finds others whose wills limit his own will. The science of education has grown with the schools. It is a new science, originating with Pestalozzi.

Moral education.—Modern education regards moral training as higher than intellectual. The rules of grammar and arithmetic may be forgotten, and the individual remains a worthy man or woman for all that. Integrity, the will to do right, must not be forgotten. The one sided training of memory at the expense of a neglect of the training of the reasoning and observing powers is discarded by new education. Physical culture is also insisted upon. In short, new education means the departure from one sided intellectual learning and the harmonious development of all the sides of human life and power. Common schools can be and must be an important instrumentality in teaching morality. This is not adding another study to the list of studies, already crowded. No new text book on morals need be put in the pupil's hand to be recited. Morality need not be on the lips in order to be in the heart. Moral lessons must be acted, not simply studied. Michael Angelo, passing through the streets of Rome, stopped to observe workingmen laboring in a quarry. Pointing to a particular stone, he said: "Bring this rock to my study; I see an angel in it." The intelligent teacher sees in the eyes of his pupils immortal souls, which his training is to form out of the rough. He can fashion the formless young human soul into an image of what is noblest and best. Self conscious will is the basis of morality. If there is no self conscious will, there can be no individual responsibility, there can be neither right nor wrong. The will training, therefore, which school instruction can give is, either directly or indirectly, moral training. Whatever strengthens the will may be made serviceable to moral education. Weakness of will is the great enemy of all moral culture. Will training may, then, be either direct or indirect. Indirect training is given to the will by the act of learning. Then, also, the presence of a good and refined teacher is a tacit lesson to his pupils all the time. The teacher, in teaching geography, teaches the data consciously; he teaches himself, his own character to the child unconsciously. The teacher's example teaches all the time. There may be many recitations enumerated on the program; but there is one recitation which it does not name, the lesson taught by the teacher's example. The true man or woman teaches morality, not in word, but in act. You cannot teach the mind without teaching the soul; you cannot train intelligence without training the will by the same operation.

Moral training consists frequently in man's ability to overcome his inclinations and subordinate them to his sense of what is right.

A child is a natural being when he first enters the school room; he must be civilized. His inclination prompts him to move about at will, but he learns to sit still as one of the first lessons taught him, and in this he sacrifices his caprice to the rational will of another. He learns obedience to established authority. In the child the animal predominates. He does not know right from wrong.

To subordinate impulses to rational will is an element of moral training. Hence the process of attention, of concentration of the mind on one object which it has decided to consider, is a means of cultivating the will. The child is the prey of new impressions. It cannot keep before its mind the thing at which it has been looking when a new thing presents itself to its view. In that it resembles the animal, which turns from one impression to another without being able to exclude them, and to concentrate its senses on the one it has selected raises him to an intelligent moral being.

A child readily forsakes his old toy for a new one. When he is engaged in a task he cannot help looking up when a person speaks in the room. Trained attention can exclude such interruptions from the mind and finish the task without allowing itself to be disturbed.

The child has not yet acquired control over himself. In the same way the savage is the prey of impulses. A group of Indian warriors once walked through the streets of Washington with that stately dignity which is their natural characteristic. As they passed a shoe store scraps of colored leather were being swept out. The warriors began scrambling for the scraps on the sidewalk. Here we see the natural man, the child. Civilized man is not thus in the power of external impression. He learns to control himself. He does not allow himself to become disturbed in the work which he has undertaken, by impulses. He has learned to mind his work.

He can concentrate his attention. Such power must be learned. It depends on the will. The child's first lesson in self control is to learn to sit still. He subordinates his wish to what is right, to rational will. In reading the child learns to subordinate himself to his better will and to keep his attention on the lesson. Intellectual and will training go hand in hand.

The school also offers opportunity for direct instruction in morality. That is a poor reading book which gives no moral training; that is a poor school which does not teach in a hundred lessons self-control. School discipline affects the will and educates it; it teaches morality practically.

Every human being must learn that he must do his duty, even when it should collide with his convenience or caprice.

Nature points out the way to teach duty. Do not say too frequently to the children of your school: You must do this because it is your duty. Let duty be taught by object lessons, by deeds.

Talking and theorizing about duty in the presence of young children is not the best way of training the moral sense. Nature places before the young eyes an everlasting object lesson of sacrifice of self, an example of purest devotion to the interest of another by making the infant witness a mother's love at the threshold of his life. Not a word of duty is said, but volumes are acted. The mother lives for the child. The mother does not say, It is your duty to obey. She speaks and the child obeys. Her love for the child constitutes her authority. Let the mother's way be continued in the school room. The principle of school discipline is not authority, but love and good will.

Classification of a school.—A question had been handed in by one of the students asking how a teacher who had to teach all branches could grade or classify his school. In the old schools each pupil was a class and each class had different text books. Such schools are still numerous enough.

Some time ago a teacher stated that he had forty-five pupils and forty-five classes and asked for advice. The advice given to him was to study the science of education, and he would find that such a course was absolutely bad. The matter of classification is one of the first elements of educational science.

The following suggestions concerning this subject might be found useful:

The saving of time is one of the benefits derived from arranging pupils into classes, and for this reason alone all apparent obstacles should give way to classifications. The old plan contradicts the idea of school instruction by making a school a place where each individual is instructed by himself, and thus defeats one of the main objects of school training, namely, competition with others.

School instruction has been shown to be superior to tutor instruction. Preparation for a life with others is the aim of education. One in a class is mental isolation. There is no stimulus, no emulation. The spirit of our Government demands harmonious intercourse and coöperation with others. It necessitates the training of the feeling of equality. Education fails in these particulars if there is no proper classification. In all schools, graded and ungraded, classification is possible and necessary.

Graded schools.—It is customary to call those schools which are supported by special local taxation graded schools. To support schools by local taxation is certainly the only way of improving public schools. But, strictly speaking, the matter of grading has nothing directly to do with the mode of taxation. This use of the word graded is simply local. Graded schools are so named from the course of studies.

Classification and promotion of the pupils by general advancement in all the studies, the laying out of a certain amount of work for the whole year in each study and promotion when the whole of it has been fairly done and no promotion on the strength of one study, are two of the characteristics of a graded school. All schools can be graded. There are so many advantages in good grading that they overbalance the other side by far. It is well known to every advocate of graded schools that all grading is but relatively correct. There is no such thing as *exact* equality in pupils. When we say pupils are equally advanced, we mean they are *about* equally advanced. All such should be in one class. The teacher has no right to have five classes when one will answer. If you are convinced that grading would be the best thing for your pupils, change your system at once. If the parents object to the unavoidable change of a few pages in the book which the child is studying, if you are compelled to advance him a little or to put him back a few pages, so as to have him in the same class with others, you must convince the parent. Whether you succeed or not depends on your personal qualifications and the respect which you have gained for yourself in the community in which you live. The teacher's position deserves respect, but it is the teacher's individuality which secures it. We should not give up grading because parents object, but should try to convince parents of the benefits of classification. Then they will like it when they see its great benefits for the children. Promotion of pupils must be made on general standing by grades, not by studies. It is difficult to form classes out of heterogeneous material. They should be formed by promotion and review. A difference of ten or fifteen pages is not an insurmountable objection to putting two pupils in the same class or uniting two classes into one. In assigning work to classified grades, it is better to be a little below than above the average.

Variety of text books is a difficulty. In this State there is uniformity of text books by law; but perhaps it cannot be always enforced. The teachers should try to convince parents and school officers of the benefits of uniformity. If a teacher cannot get all his pupils to get the same book, he should form classes which use uniform books. This can be done in some studies, like reading, even when there is a variety of books; the teacher may let two or three read from one book. Even where one series of books is used as a rule, it has been found a good plan to have children read from one book awhile and then from another.

When children have read for too long a time in a reader, they are apt to know the pieces by heart, and their reading is no longer an exercise in pronouncing words at sight. Pupils often remember what is not wanted and do not memorize what is assigned as a lesson.

If the teacher has succeeded in convincing the great majority of the parents to pronounce in favor of a uniform series of books, the wish of a single individual parent should not stand in the way.

At the beginning of instruction there is no necessity at all for several classes in reading, on account of the variety of books which the pupils have brought to school. The teacher should use the blackboard in teaching the element of reading and print the words or letters on it. Even if its members have ten different books, the class can thus be kept together. It is still better to use charts in teaching reading.

The time and manner of forming classes were discussed.

It is well not to advance new classes too rapidly at first. Some stragglers will come in. New pupils coming in within a few weeks after a new class has been formed should not be put in classes by themselves. Teachers must consult the good of the majority, not of the individual. When topics of general interest are taken up, the questions should be asked the whole school, not the classes. This cultivates the school feeling.

Text books are necessary in country schools. Teachers who have only two classes, and can give half their time to each, can communicate much information orally, by object lessons or discussions; but where a teacher of a small school has many classes, he can devote but little time to each. The text book must not be abused. It is an abuse when the recitation is heard verbatim, without questions from the teacher connecting the lesson with other information. The art to use the text book depends upon the skill which the teacher possesses in asking questions. To allow pupils to use words without knowing their meaning, is a crime against the intellect and leads to deception and dishonesty.

Do not try to cover much ground in teaching at the cost of thoroughness. Teach a few things, but teach them well. The schools of Prussia were alluded to in illustration of this principle. They observe a wise limitation in work. Not that a blind imitation of other systems is recommended, for each community is guided by its own necessities. The people's schools of Prussia decline to teach branches beyond the common school curriculum. They teach enough language—the mother tongue—for practical uses. The practical parts of arithmetic are taught. These two studies are the principal work. They do for the pupils not many things, but much. Geography, history, natural science, the botany of the district, are taught incidentally in reading.

As to classification, they have two or three grades only, so that the teacher's time is not frittered away by compelling him to teach six or ten classes.

If we plant a cherry to raise a tree, we must not dig it up to-morrow to see whether it has grown. All good things require time to mature. The teacher must not expect to see immediate results from his work; but in the course of time it will be seen that no work is more important for a community than the conscientious teaching of the young. The teacher should be a missionary of new ideas in his community. He should learn a lesson from the water painter. The first tint is not visible. The second and third cannot be seen; but the final result is a clear, deep, and even tint. By keeping steadily at work, the teacher, like the painter, will accomplish his purpose. The correlation of forces teaches that no force can be lost; it may be changed. When a cannon ball strikes, its motion becomes heat. The principle is true in the moral world. No force of soul work is ever lost. The teacher's work will come out. He works for eternity.

Discipline.—Records of attendance should be kept and parents should be informed of the absence of their children. This is the mode adopted by one of our fellow teachers: When one of his pupils is absent, he always informs the parents in writing or personally and expresses the hope that the absence is not caused by serious illness. He believes in preventing rather than in punishing. He tells his pupils that it will not do to arrive just at 9 o'clock, too excited by a brisk walk for quiet work. He locks the school room door about fifteen minutes before time to open. The first morning when this experiment was tried, twenty came late; next day only six; only eleven in the whole year following. Let the teacher show both to parents and pupils that he values punctual attendance. Nothing is of greater importance in life in our age of railroads and letter writing. When you want to blame, put it in the form of praise. For instance, praise pupils who are punctual, and thus blame the tardy. Be sparing in censure. When censure is necessary, it will then receive more attention. Do not expect perfection. Be satisfied to aim at perfection and to reach approximate perfection. You will never be relieved from the necessity of making your school better by thinking that it is perfect.

It is better for young pupils to have one half hour recess than several short recesses. They need physical exercise, and will take it during the recitation by fidgety and unruly conduct if you do not allow enough scope.

Value of the study of the theory of education.—Practice, experience, and knowledge mean much, but they do not make theory useless. America was discovered in theory long before it was actually done. Columbus' confidence in theory enabled him alone to persevere in the apparently foolhardy attempt which proved so great in practice that it immortalized his name. The scholars of that time did not believe in theory; they sneered at the vagaries of Columbus; they were practical men, but they were mistaken.

The science of education is the condensed, systematized, well arranged, and practically applied experience of the race. We hand our own life experience to our successors and it becomes their property. The privilege of enjoying the experience of our predecessors or of leaving some lasting memorial of our own lives belongs to man alone.

No matter how well you train an animal, what it knows or can do dies with it; it cannot communicate its knowledge to its offspring. But man is heir to all the knowledge of the race. His knowledge becomes of value to him only by his communicating it to others.

Inventions are worth nothing unless the inventor can sell his invention to others and the whole world share the good.

Thus it is also possible to communicate the joint educational experience of the world, and this practical experience forms the science of education, part of which is taught in this institute.

Theory and practice.—The true test of practice is that it is correct theoretically. The true test of theory is that it is correct if practically applied. Depart from former plans if they are not rational and adopt more rational methods. The true art of teaching is to take what is good from old and time honored customs and to abolish the evil.

The science of education.—The science of education should be learned by every teacher. It is a proper subject for study for teachers as well as for others. It is as beautiful, as deep, as interesting as any we can study. One thing all ought to know, education. Not everybody can be a school teacher, but all can be educators. We are trained continually in all relations of life by the people whom we meet, and we influence them in turn. In the family the work of education is mutual.

Brothers and sisters add their influence in educating each other. Parents are educated in more than one sense by their children. The study of the science of education is, therefore, interesting to many. It is of special importance, however, to the teacher. He studies it practically in his work; but he must expand his knowledge by the study of books and observation. What advantage may we, as teachers, derive from this study? A proper estimate of the science. The character of our work depends upon what we put into the work. Our teaching is a reflection of ourselves. Improving ourselves improves our teaching. Our work depends upon our personality. What we are we can make our pupils to be. This study engenders a professional spirit.

You may contribute to the perfection of this science yourself. Write about your plans of teaching and keeping school. Let others profit by your experience. Do something for others. The good you do in this direction will be profitable to yourself as well as to others. Let the teacher be fresh and progressive. We should not allow school dust to settle on our souls. Avoid mere mechanical, monotonous teaching. Keep up the enthusiasm obtained at these teachers' meetings. Do not be severe and cold in manner. Be earnest in work, cheerful in manner. Love and kindness are powerful factors in school work.

Definitions of education.—Education and instruction, used as synonymes, often mean very different things. Education is derived from Latin *educare*, not *educere*. The terms are kindred, but not equivalent. The province of education is much broader than that of instruction. There may be instruction which is not education, on account of valueless subject matter and on account of poor methods of conveying information. Not instruction merely, but education, is the aim of the school.

The idea is not to instruct, but to educate; not to make scholars, but good men and women.

The great men of the future are now in our schools. It may be your privilege to be their teacher. Faculties now dormant must be drawn out by the teacher's hand and brain. Education begins when the child first sees the light.

Education is drawing out innate faculties. It is difficult to define education, for the reason that the more comprehensive the thought the more difficult the definition. Hegel says, "Education is the art of making man ethical." The ethical institutions are the family, society, and the state, and the definition, therefore, means that education should prepare man for life. Education has also been defined as the art by which man is raised from a state of nature to a state of culture. Another definition is that education is the art of making man free. Man is subject to natural impulses and desires. These are not always right. Duty first appears to a child not as something abstract, but as obedience. He knows that the mother's voice is obeyed. There can be no bondage worse than that in which the human being is found who has not learned to control natural impulses. If education gives power to control these, it gives freedom. Tennyson, in In Memoriam, says:

> Our wills are ours to make them Thine,

pointing in this at the necessity of the individual will subordinating itself to rational will. Our wills should be subject to the will that is in all the universe.

The definition that education is the development of the rational powers of man seems best; not powers, but rational powers. Man's powers for evil should not be developed. Education must think of man as an individual. He must be taught to find peace in himself, happiness in his own soul. It is not well to train pupils to hope with anxiety for some great event that will change the current of their existence, a course encouraged by novel reading. It is not wise to point children to great stations in life. The child will then become another Micawber, always waiting for something to turn up, instead of using the moment before him and trusting to honest labor. Reading good novels is refining. Sensational novels should be avoided. Such reading gives improper ideas of life. Our lives must be what we make them. Hence, a child must be taught to find happiness in his own situation. He is happy whose happiness is independent of external changes, since it rests on the peace of his own heart and soul.

Departments of the science of education.—Education is sometimes classified as physical, moral, intellectual. We should add, history of education. This classification is faulty because it omits the feelings. Moral education ranks highest. This teaches the child to submit to higher will, expressed in customs of society and in divine law. Good men doubt whether public education has in it enough morality. Both the school and the church teach morality. Religious teaching is the great work of the church. There is here, as elsewhere, a necessary division of labor. The school can never undertake the church's work of teaching the sublime truths of revealed religion. But the general principles of morality should be common to all schools. The school is one factor, the church another, in education.

The moral element is that man wishes to do right. Will is an element of morality, but not altogether identical with it. Strong will is not necessarily also a moral will.

Suggested as better classification: Physical education; education of the feelings (or emotions, sensibilities); education of intelligence; education of volition; history of education.

The teacher's preparation.—The question is asked How can a young teacher best prepare himself for his work?

The teacher should know the subject matter which he is to teach. I have known teachers whose plan is to keep a day ahead of their classes. Cannot believe such teachers succeed. The teacher must know, and know well. Your pupils cannot be deceived. They know whether you speak from an empty or a full mind. Appeal to own experience. It is better to know subject without method than method without subject. General knowledge is not enough. To a knowledge of the subject matter the study of professional works on methods of teaching should be added. It has been asked how can I acquire all this knowledge without receiving instruction from teachers? Trust to self study. Knowledge is best learned from good teachers, but can be acquired by yourself. The degree of knowledge we possess depends on one's own self, one's own exertions.

Methods of teaching.—Methods of teaching were explained with special reference to reading. The nature of analytic and synthetic methods was discussed in many lectures on the subject. The so-called A B C method was in particular spoken of, and its great shortcomings illustrated practically and theoretically. The phonetic and phonic methods were fully set forth and practical exercises given to the institute.

The introduction of the word method of teaching reading was recommended as the only rational method suited to the books used in the State. The principles of the word method were explained and its practical working shown by teaching exercises before the institute. The essential element in teaching reading is the recognition of the spoken word in its printed form. This is the simple difficulty. Other difficulties should be avoided. Reading lessons should also be language lessons. The picture aids to make it thoughtful reading. Pictures are essential. Trust the experience of others, and try this new method, without feeling discouraged if it seems difficult at the beginning. New and improved methods cannot be acquired without effort. We should go slowly. Should not take up new words until the first are well learned. The stopping to spell is avoided, because we should learn words as words. No method will relieve from necessity of thorough drill. Reading at first should be sentence reading. Drill on words, but read the sentences with the class. The article will soon be learned. Do not allow children to read "See——the——cat" with a full stop after every word, but make them read it as they speak it. Begin to teach expression in the beginning The punctuation points should be taught at first. The child must understand what he reads. Man's consciousness of the reasons for his actions distinguishes him from the brute.

Do not defer explanation of difficulties to some future time. It has its own difficulties to contend with. Difficulties grow.

Should we teach a beginner punctuation? Yes and no. Use the name of the different marks, explain their function, but do not drill simply on their names.

There are variations of the word method. Advised combination of the word and phonic methods.

Practical hints in teaching reading. Print the lesson on the blackboard at the beginning or use charts.

Recommended use of the word and phonic methods combined. In the word method we do not speak of the sound; we trust to the memory. The phonic begins in the same way. The word is to be recognized at sight. Next it must be analyzed as to sounds and the characters expressing these sounds. Used Appleton's First Reader, first lessons, to illustrate: Make children say *my cat* as one word, not *my*——*cat*. Secure the elements of good reading in the beginning; then practise on the sounds. Keep the children pointing. They enjoy activity. The recitation at first should not be longer than ten minutes; fifteen minutes is the extreme. All these should be minutes of hard work. Keep the recitation animated, lively. Teach what the sound of the word, of the letter, is. Copy the page on the blackboard. Say nothing of the names of the letters. After drill on the words let the class read sentences. Then converse about the picture, after which phonic analysis and then writing in script follow.

Writing.—The old plan was to require children to "print" the words on their slates. It was done in order to keep them busy; they had as yet no knowledge how to handle the pencil. Usually what they printed represented nothing in heaven or on earth. The teacher has been trying for twenty years to find out the object of having the children print the words on their slates. It spoils their handwriting. Attention to pencil holding is wholly neglected. Another objection is that they lose the right slope of the letters. In printing letters are vertical, in writing they are not. This "printing" should first be dispensed with altogether. Writing should be taught from the first. The pupil should first be taught to write his own name. There is no other knowledge a person needs more, as far as penmanship is concerned, than the ability to write his name. He should learn it first therefore, although another way of beginning instruction in penmanship would be easier.

How long the pupil will remain with us is uncertain. While he is under our care we should teach him such things as will be of service to him in life. Our own name is the most important thing we ever learn to write.

Write words on the blackboard and require the pupils to copy them.

In answer to a question the lecturer said that it would be best, in teaching reading, to teach the sound of the letters only at the beginning according to the principle "One thing at a time." He would, however, first teach the names of the letters also, but would do it under protest. If free to choose, would wait for six to ten weeks before teaching the names of the letters. But, if the teacher does not teach them, some one else will. Parents will ask children how words are spelled. If a child gives the sounds, the parent, in surprise, will give the names of the letters, and the children will be confused by the difference of authority. Hence teachers had better teach names also. Exercise in spelling by sounds. Spelling is rather an obstacle than an assistance in reading.

The script reading method was briefly described. In it the printed letters are not taught at all at the beginning and the reading of written characters alone is practised. Whatever words children have learned to read, when taught by this method, they are required to write. This method is simple, since it has to deal with but one set of characters. Its advocates hold that it is the natural course, as words must be written before they are read. The objection to such a method is, we cannot keep children in school long, and should, therefore, teach necessary things from the first. We cannot allow children to remain ignorant of the printed form for some time.

The topic of new methods led to a brief exposition of the so-called Quincy experiment and the method tried by Superintendent Parker.

Reading in higher grades.—Aims in reading should be the acquisition of knowledge, skill, and taste. Drill until words can be recognized at sight. Proper expression is an art. All art is imitation, was Aristotle's opinion. Poets and painters imitate nature. Pupils imitate the teacher. Good reading is in the first place taught by imitation. The teacher's first step should be to learn to read well. By reading well is not meant declamation or elocution. All stage effects are out of place in the school room. There we want natural reading. Reading is not simply a vocal art, but also a mental art. It is not merely an exercise of the lungs, but also of the brain. Reading should call up ideas, images, in the mind of the child, thus becoming thoughtful reading. Concert reading by teacher and pupils is at times useful, but do not allow *shouting*: it should be carried on in an undertone.

Practical illustrations of how to conduct recitations in reading and reading in concert were given.

Further suggestions.—Drill the class until they can read well in concert. Make frequent changes between class and individual reading. This plan secures attention Practise until each word is recognized and understood. Next, ask a few questions, in order to teach the pupils to read thoughtfully and to remember what they read. Intelligent reading is by no means a common art. Few read a newspaper or a page and remember. Finally, send pupils to seats and require them to copy the lesson or a part of it.

In the higher grades much of the time should be given to cursory reading, but ten or fifteen pieces should be thoroughly studied during the year. These should be first read to the class by the teacher. New beauty is sometimes brought out in a familiar piece by hearing it well read or quoted. Sometimes the story should be told or the piece explained before it is read. A piece for which the minds of the children have thus been properly prepared will produce impressions that will never be effaced. The pupils will love the piece and read it after they go home. The teacher's respect for a good piece as a work of art should cause him to insist that the piece should be well read. All the pieces should be made the subject of catechetical exercises, for thoughtful reading is important in all the grades.

Two kinds of questions should be asked: those which can be answered from memory and those whose answers will require some exercise of the reasoning powers. Lastly, the piece should be made a subject of grammatical study. The pupils should be required to write out the nouns, adjectives, &c. This is the best method of studying the elements of grammar. A number of the classical pieces should be memorized.

When the meaning of a piece is not on the surface, an explanation should precede the reading; thoughtless reading must not be tolerated. If the general character of the piece is clear, better to read it first and give such explanation as may be necessary afterwards. The teacher need not be an excellent reader, an elocutionist. So much the better, of course, if he is. But it is no excuse for a teacher to say that he does not read to his school because he is not an elocutionist. The teacher should read before his classes; should read as well as he can. No one expects more than that one should do his best. But he should try to read well. (A selection from Appleton's Fifth Reader, p. 161, was read for illustration.)

Questions on the reading lessons.—The art of asking questions is one of the greatest difficulties in teaching. Questions must be pointed and definite. Questions requiring answer *yes* or *no* should be avoided. Such questions lead to guessing, which is always out of place in the school room. Young teachers should write out questions on the reading lessons beforehand.

Part of Poe's "Raven" was read, with specimens of such questions as should be asked. One aim of these questions is to enlarge the child's vocabulary. A person's culture and intelligence stand in close relation to his vocabulary. A word is ours not because we understand it when we hear it used. Only when we are able to use a word it belongs to our vocabulary. The vocabulary of children and laborers is about three hundred words. Shakspeare's vocabulary is estimated from eight thousand to fifteen thousand words. This shows the extent to which the human mind can be trained.

Those questions whose answer requires exercise of the reasoning powers are the most important. Proper answers show that the lesson has been mastered. In the lowest grades very few questions on the reading lessons should be asked. The lessons are simple and not difficult to understand, and all the time should be given to drill on the pronouncing of words at sight.

Spelling.—The question of spelling was briefly touched upon. Written spelling is preferable to oral spelling; the eye is the stronger sense to master and retain knowledge. Where a phonic method is used in teaching reading, the child should spell by sound and by letter in all the lower grades. This course removes the objection that by the new methods we teach reading, but not spelling.

Queries.—Several lectures toward the close of the institute were devoted to answers to some of the pertinent queries handed in by the students. Only a few can be mentioned here.

"What educational papers shall we read?" Answer. In the first place, read a good daily paper; there is nothing that can equal its educational influence, if read with judgment. Next, encourage the educational paper of your own State, the Southern Educational Monthly. The principal educational weekly is the National Journal of Education. Education, a bimonthly magazine, the Pennsylvania School Journal, by Wickersham, Notes and Queries, by Henkle, Salem, Ohio, can be recommended.

"If laborers work ten hours a day, why should not teachers? What shall we tell a school officer who asks such a question?" The question is not, can teachers stand ten hours, a day's work, in the school room, but can the children stand it? The raw material with which the teacher works differs from that of all other workmen; it is less patient. A child should not be kept in the school room longer than six hours a day. Five hours is better. In some districts of England little children are kept in school from two and a half to four hours. This is a sensible plan. If children can attend only a few weeks, the daily session, of course, should be extended. If the children cannot go home at noon, have a short recess and a single session.

As to "allowing pupils to leave the room during school hours," a liberal policy is best. If the privilege is abused, it will usually be in special cases, which can be treated as such. When you are in doubt, be liberal, lenient.

"Should corporal punishment be used?" Avoid it, if you can. The best teachers do without it. He has seen boys whom no whipping could move brought to tears by kind words. Teachers should always have the right to use corporal punishment, but should try to learn how to manage without using it. "You tell me that some children cannot be managed without whipping." That may be; but there are also teachers that cannot manage any room without whipping. The necessity of the use of the rod is, in many cases, no indication of the weakness of the pupil, but of the teacher.

The lecturer, personally, was opposed to the infliction of corporal punishment. At any rate, it should be held as a last resort for offences for which ordinary punishments are not enough. Its use implies a criticism on the teacher's power. But, on the other hand, good order must be maintained in the school room at all hazards. We must have good order by gentle means, if possible; by harsher means, if necessary.

Never inflict corporal punishment for errors. Never inflict corporal punishment while in a passion, but let it speedily follow the offence. Do not let any instrument of corporal punishment be a part of your school furniture. The lecturer's advice was not to dispense with corporal punishment, but to *try* to do without it. When its use is necessary, use it with vigor.

School discipline.—The last lectures of the course were delivered on the subject of "School discipline."

Good discipline in a school is as important as good lessons. Studying lessons is but the means to an end. The end is to make the child a good member of the family, society, and state. The true school ideal is not to make a scholar, but a good man. The teacher cannot afford to allow faults of the pupil to remain unnoticed, for the aim is to make the pupil form correct habits of life, and each wrong action is a break in the pupil's incipient habits. The first point is attention to each error.

Discipline, in its wider sense, leads the child to do right of his own free will. He must learn to do right because he wishes to do right. The educator's influence, ever active as it is, must not appear meddlesome; it must be kept in the background. That discipline is best which makes the pupil do right without letting him know that he is influenced.

In a narrower sense, discipline is the repression of wrong. The pupil must do right. The teacher can't allow him to do wrong. There are two kinds of school discipline: one which looks at the school and the other which looks at life. One kind of discipline makes pupils behave in the school room. This helps the work there, but its good influence ends with school days.

The influence of the other kind continues; it follows the pupil through life. It is hard to draw the line between the two. The true test of correct discipline is not in the appearance of the school room. It lies beyond the school room. Does the pupil contract those habits which should become his second nature?

There is a limit to school room order. It may even interfere with studies. Where there is too much mechanism and formalism, the work must suffer. There is also another extreme. Discipline, when too severe, is worse than when too lenient. There is much of the animal in man and a great deal of it in children. If this is suppressed in school it will break out afterwards. Many a wild boy in college has a strict father at home. We cannot repress the tendencies of human nature.

What is order? Insist on all points that you know are important in life. Be lenient where you can be so without risk to the pupil or the school. Be patient. It is one of the necessary labors of our profession to correct the same errors all the time without impatience. Remember you have new pupils every year. The questions which seem old to you, which you have answered time and again, are new to the children. Conductors and post office clerks, as well as teachers, have to hear the same questions time after time. Be prepared for this. Do not allow yourself to be worried.

Remember that all homes are not cheerful. Make the school room as cheerful as can be. The teacher should be not a mere taskmaster and remain a stranger to his pupils.

Your school is somewhat a reflection of yourself. If there is trouble in discipline, first seek its cause in yourself. This is the best mental attitude. Be hopeful. The power is the teacher's personality. Make your own life worthy to be an example to your pupils. To improve your pupils, improve yourself.

Methods of primary instruction.—In this study the class took up the subject of teaching the letters to children and discussed the various methods of instruction in this particular. Full illustrations were given, and questions asked by the members of the institute were considered during the recitation. The last lessons were devoted to an exposition of the letter sounds of the English language, so as to guide teachers in regard to frequently made mistakes.

Special topics in arithmetic.—Mr. Riemann was in charge of another class recitation in arithmetic. The special importance of arithmetic, together with the fact which every teacher is aware of, that arithmetic is the most difficult study to teach, was stated. Some of the most difficult parts of the science were taken up in a special recitation. This arrangement made it possible to give to the study the time and attention which its importance deserved.

The topics which were mainly considered in this recitation were percentage and interest and the subjects connected with these topics. It was practically illustrated on the blackboard how the subjects can best be explained and taught to children; frequent errors in teaching were pointed out. I do not doubt that this feature of the institute will contribute towards improving instruction in this branch.

Penmanship.—Lessons were given which dwelt on the analysis of the small and capital letters. The methods of teaching penmanship in the primary schools were explained, and many practical hints were given concerning the holding of the pen, position during writing, &c. While penmanship was an optional study, the fact that by far the larger number of teachers took part in it shows that it was considered by them a useful feature of our work.

Physical geography (*W. D. Schoenberg*).—After a short instruction to explain the province of physical geography and to demonstrate its importance as a branch of modern instruction, the titles of text books and books of reference were given. A condensed description of the planetary system followed; an attempt was made to give satisfactory accounts of the most interesting phenomena connected with this subject, and, for obvious reasons, more than the proportional time was devoted to the subject of comets. Outlines of geology followed: general classification of rocks; formation of the earth's crust; Kant-Laplace theory; historical geology; classification of organisms.

Owing to the fact that physical geography could be introduced only as an optional study and that very little time was allotted to it, the instructor could not proceed beyond this, believing that he would do more to encourage a love for this subject and a desire for its study among his hearers by treating the few topics enumerated in a thorough manner than by covering more ground in a mere sketch.

Geography (*J. S. Perrin*).—(1) Geography as a science: Progress in the study of ge-

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ography as the development of the mind. At what age and where to begin the study. Geography of the school room, yard, &c. Geography of the earth. Real form. Proofs of. Apparent form. The horizon. (2) Representations of the earth: The globe. Hemisphere. Map of the world. Lines and circles on the globe. Mercator's map. The lands of the earth. The two worlds. Continents. Islands. Continents of the old world; of the new. Coast. The sea. Oceans, &c. (3) Land surface: Profile map. Lowlands. Highlands. Division of. Plateau, table lands, mountain, range, peak, system, group, volcano. Inland waters. Rivers. Uses of. Things connected with river beds. Precipice, waterfall, cataract, cascade, rapids, &c. (4) Inland waters (continued): Water shed. Uses of. Basin. Course. Current. Delta. Lakes. Formation of rivers. River valleys. Alluvial plains. Formation of lakes. Character of lakes. (5) Climate: How modified. Occupations of men. Wants of men to be supplied. Our food and clothing. Our shelter. Materials for use. Places fitted for different occupations. (6) Study of the continents: Intelligent use of certain terms; pictures; physical map. A logical order in which to present the different points necessary: Guyot's order of presenting them: (*a*) Position on globe; (*b*) size and contour; (*c*) surface elevation; (*d*) inland waters; (*e*) climate; (*f*) vegetation; (*g*) animals; (*h*) people; (*i*) industries. (7) Study of North America: Globe and map necessary; work for the teacher; work for the pupil; the different points to be studied in logical order. One important addition: map drawing. (8, 9) Map drawing: Advantages of; methods of conducting, illustrated. Guyot's triangular method preferred for general outline; internal construction. (10) Mathematical geography: Form of earth, real and apparent; motions of the earth; effect of; day and night; summer and winter; causes of; zones. Conclusion.

Singing.—Singing was placed on the program of the institute as an optional study, but almost all the members took part in it, showing thereby that they considered the instruction both profitable and interesting. The object of the study was to show how to teach the elements of the art to little children. The teachers themselves formed the class, and the instructor explained, by teaching them, by what methods they could teach the subject in their own schools. The art of music is justly considered an important element of common school instruction. Besides the great influence it has on the training of the voice, it is excellent physical training. The highest aim of it, however, remains: the inspiration it lends to school work, which is made more cheerful by it, and the influence which music has on the training of the character and temper of the pupils.

Calisthenics.—Miss M. C. Judson gave instruction in calisthenics. She introduced her work by remarking upon the value of these exercises, not only as a means of physical culture, but also of mental and moral training.

They promote health, by bringing into action every part of the body, and are, at the same time, a corrective of the stooping shoulders, contracted chests, and consequent imperfect breathing so characteristic of students. They train the mind by requiring concentrated and rapid thought. They aid moral culture by bringing the body under the control of the mind. Every part of the body is taught to obey promptly and readily the dictates of the will.

She spoke also of the aid these exercises afford in other departments of teaching by the valuable habits they cultivate in pupils, particularly those of prompt obedience, strict attention, and accuracy. The pupil, trained to these in the calisthenic hall, more easily carries the same into the recitation room.

These exercises were further recommended for cultivating grace of movement, a point of by no means minor consideration for a woman.

Attention was called to the importance of music in connection with the exercises, either vocal or instrumental. It was well to employ both at times, if practicable.

It was further shown how these movements might be made useful as an aid in vocal training. Light muscular exercise, in connection with that of the vocal organs, was recommended by all who had in charge the training of the voice as the best means of giving to it clearness, strength, flexibility, and purity. It was advised that for this purpose teachers frequently require the voice to be used in connection with the calisthenics, either in singing, recitations, or by uttering simple sounds or single words.

Algebra.—In the lessons in algebra, which formed an optional study, Mr. Davis spoke of the general nature of the science, comparing it with arithmetic. The following topics were considered: Algebraic addition, subtraction, and multiplication, coefficients, exponents, signs and their meaning, factoring, fractions.

At the special request of Professors Davis and Soldan, Professor Judson, of Furman University, gave three short lectures on the fundamental principles of algebra.

After some introductory remarks on the importance of the study of mathematics as a means of mental discipline, the professor said: There are two primary, simple, and undefinable ideas which have given rise to the science of mathematics: the idea of number and that of extent. The idea of quantity, he held, is complex, involving both the notion of number and that of extent, as in the expressions, 20 feet, 50 acres; magnitude, or greatness, may be predicated of mental as well as of physical forces; but quantity can be affirmed only of that which can be measured.

Although numbers greatly aid us in our conceptions of relative magnitudes and it is only by aid of numbers that magnitudes can be measured, yet one cannot properly represent the other, as number and magnitude have no quantitative relation whatever. Thus, 10 does not represent any distance and cannot be represented by any distance.

The notion of extent of space gives rise to geometry; that of number, to the calculus. The calculus is subdivided into the finite and infinitesimal calculus. The finite calculus includes arithmetic and algebra. The subject matter, both of arithmetic and of algebra, is number, pure abstract number.

In arithmetic, numbers are represented by characters or symbols having assigned values. These characters may be the letters of the alphabet, as employed by the ancient Greeks; or the well known Roman numerals, still used in numbering chapters and propositions; or the Arabic figures, called also digits; but, in every case, the same symbol always represents the same number.

In algebra, numbers are represented in a more general way by symbols having unassigned values. Hence arithmetic is essentially the calculus of values, whilst algebra is the calculus of relations. It is a mistake to say that the letters of algebra or the figures of arithmetic represent concrete quantities. They represent only the ratios of these quantities to their units of measure. These latter statements, being at variance with the teachings in our text books, were vigorously defended and illustrated at length by examples from analytical geometry and mechanics.

The professor then proceeded to criticise the definitions found in our standard text books and to insist on clear, precise, and accurate definitions, on which, in part at least, the science of mathematics rests.

In explaining the fundamental rules of operation in algebra, the professor said that much confusion arises from overlooking the fact that two distinct operations are often embraced in the same rule. Thus addition consists in uniting two or more algebraic expressions into one, which still express the value of the aggregate of all the expressions. This is done by simply uniting the expressions by means of their proper signs. If the result contains similar terms, such terms may then be reduced to a single term.

The usual rule is for addition and reduction of similar terms by one operation. In like manner subtraction, which is the reverse of addition, is effected by uniting with the minuend all the terms of the subtrahend with their signs changed; after that, we may reduce the similar terms. The usual rule combines the two operations.

Again, to multiply an expression by $x-3$, we first multiply by x and then by 3, and subtract the second product from the first. The signs of the reduced product are, therefore, in part the result of subtraction. Minus three times the multiplicand is without meaning. Thus, if —4×3 has any meaning, it is that —4 is to be taken 3 times, giving —12, and this result is to be subtracted, giving +12.

The professor concluded his third lecture with some illustrations of symmetry and of abridged operations in multiplication, division, and in involution.

Languages.— It was the aim of the optional lessons in languages, Latin, French, and German, to give such help to the students as would be of use to them in studying the subjects by themselves during the year. In most of these studies there were two classes, one for beginners and the other for more advanced students. In French and German, pronunciation formed the special topic taken up this year, while in Latin, under Mr. Riemann's supervision, regular work in reading and translation was done. Professor Joynes was in charge of the French class.

Public lectures.— You had secured the assistance of a number of eminent men to deliver lectures to the institute. These lectures were attended by a large number of the citizens, besides the members of the institute, and were much appreciated by all. They added much to the general interest of the institute.

There were also a number of addresses delivered during the morning session of the institute by prominent visitors. His Excellency Governor Hagood was among the first who lent us the support of his presence, and his kind words of appreciation encouraged the students and teachers very much.

Dr. J. L. M. Curry, general agent of the Peabody fund, and General John Eaton, United States Commissioner of Education, both delivered lectures in the evening before crowded houses and addresses to the institute in the morning. The stimulating influence of these lectures can hardly be overestimated. Representative ideas, put into words by representative men, were bound to create lasting impressions. Each teacher felt the importance of the work he was engaged in more keenly when he saw the estimate put upon it by these lecturers whose names were familiar to every teacher.

Dr. W. T. Harris, who enjoys a national reputation both as a philosopher and an educator, delivered several lectures before the institute in the morning and a public evening lecture besides. The subject of the former was the philosophical explanation of the course of study for the primary school. The subject of the evening lecture was "The school and the state." Listening to the lectures of the distinguished gentleman, which had attracted visitors from other towns, our teachers became acquainted with the most philosophical modes of treating and considering educational questions; and I have heard many expressions on the part of our students of the benefit they derived from this and other public lectures during the time of the institute.

President William Porcher Miles, of the South Carolina College, Columbia, delivered one of the most suggestive lectures of the course and placed before the minds of his interested hearers a comprehensive statement of the lines of advance along which education must move, both as regards the state and general progress of the art.

The State Teachers' Association held its annual meeting during the session of the institute, and the teachers attending the latter had the privilege of listening to the lectures on the program of that body, among which I beg leave to mention those delivered by President Carlisle and by yourself in particular as being of special value to the teachers. I regret that I have not space enough to speak more fully of all the lectures and their contents. No brief account could do justice to them.

Conclusion.— The institute held last year at Spartanburg gave a new impulse to the educational energy of the State. The institute of Greenville was larger in number, and, measured by this standard, its influence will be no less powerful. The earnestness of the students, the coöperation of many who took part in or supported it in various ways, helped to do for the cause of education in South Carolina what will bear fruit in no distant time. Personally, I have been able to do very little for the institute. I must return thanks to those whose work chiefly made the enterprise so successful. And it must be said that no little work was required to achieve success.

For months previous to the meeting of the institute its organization had to be prepared. The plans had to be laid out and their realization to be brought about. Instructors had to be engaged, a program to be settled, and information of the proposed meeting to be communicated to the multitude of the teachers of the State. The many questions which are apt to be asked in connection with such an undertaking had to be answered, involving much timetaking correspondence. Then the local preparations had to be made: rooms had to be secured and fitted and board to be obtained for the teachers. Not enough with this, the railroad arrangements had to be made, by which reduced rates were allowed to teachers attending the institute. Without such an arrangement the attendance would necessarily have been a very small one, for the salaries paid to teachers do not allow them to incur the expenses of travelling long distances.

All these important matters were attended to by yourself. The instructors carried out your plans, but the organization of the institute was your work, to which you had given months of preparation. The institute, as I had the pleasure of saying on another occasion, first existed as an idea in your mind and then became a reality by your efforts. This enterprise, which I sincerely believe has done the most beneficial and lasting service to education in South Carolina, owes its existence to you. The greater part of the labor was your own. You were present during the whole session of the institute, and by your personal intercourse with the teachers, by taking charge of all the thousand details of the management of the work, relieved the instructors from these cares, so that they could give their undivided attention to the work of teaching and could concentrate their strength there. The multitude of labors engendered by such a meeting of more than three hundred teachers, all of whom want information about something or other connected with their schools or with their attendance at the institute, and which are as important as the most important study, but which do not appear on the program—all these things were attended to by yourself personally; and I beg leave to return sincere thanks to you for the support you have given to every teacher in the institute by the influence of your presence and by your work. Without your labors the institute could not have accomplished the good which I believe it did.

III.—THE FIRST INSTITUTE FOR COLORED TEACHERS IN SOUTH CAROLINA, 1881.

By H. P. MONTGOMERY, *Principal.*

The institute was opened in the hall of the Howard School, Columbia, at 12 o'clock M., Tuesday, July 5, with a membership of 100, and closed Friday noon, July 29, thus continuing four weeks. By the efforts of the superintendent and others interested in the work the attendance before the close was increased to 185.

The object of the institute was to give instruction in school organization, discipline, and teaching according to the most approved and advanced methods. For this purpose four instructors of successful experience were employed: the principal taught arithmetic, elementary geography, and lectured on school organization, discipline, and hygiene; Mrs. E. V. Montgomery gave instruction in reading, phonic spelling, and language; vocal music was taught by Prof. H. F. Grant; Mr. R. L. Peters taught free hand drawing and penmanship.

Each pupil teacher was requested to provide himself with note book and pencil and required to take notes on the various topics discussed.

Program.—The following was the daily schedule for the first two weeks: 9 to 9.15, devotional exercises and roll call; 9.15 to 10, lecture on "How to teach arithmetic;" 10 to 10.05, singing; 10.05 to 11, reading and phonic spelling; 11 to 11.10, recess; 11.10 to 12, map drawing; 4 to 5, free hand drawing; 5 to 6, vocal music.

Monday and Tuesday of each of the last two weeks were devoted to practice teaching by the members of the institute, under the immediate supervision of the instructors. Practice teaching consisted in dividing the institute into four sections, each considered a primary school, over which five persons exercised control, each occupying twelve minutes, about the length of a recitation for very young children. By this method each member was called to conduct several recitations in the presence of the instructors, and his failures were pointed out and corrected. This formed a most valuable feature of the work, since each pupil teacher was made to express himself clearly, pointedly, and in a pleasing manner. He thus proceeds step by step, according to Pestalozzi, presenting but one difficullty to the child at a time and reducing each subject to its elements.

The Pestalozzian principles were formulated and given to the teachers at the beginning, and all subsequent teaching was made to conform to them, their advantages being pointed out and forcibly emphasized.

In reading, the word and phonic methods were combined, the teachers being taught to print words on the blackboard and then instructed how to make their pupils recognize them by their form at sight and finally to resolve them into their elements. A thorough daily drill in the vocals was given, thereby enabling the teacher to articulate with ease, rapidity, and clearness.

Language was taught in accordance with the principles set forth by the best and most approved educators.

It was deemed expedient to omit all technical terms until the pupil had mastered the fundamental operations of arithmetic.

Map drawing included full directions and practice for drawing the State of South Carolina and all the continents.

Geography was taught by beginning with the immediate locality of the school, explaining the points of the compass and the geography of the town, then branching out into the county, then into the State, and finally the section in which the State lies, and thus they were prepared to study the United States as a whole. Pupils were required to draw maps without the use of books.

Penmanship, according to the Spencerian system, was thoroughly and skilfully taught. How to hold the pen, position of the body, and the various movements of fingers, hand, and arm were fully explained and long dwelt on. The principles underlying the system were pointed out and each letter fully analyzed.

Drawing was mapped out into a course of fifty-two weeks, and the members thoroughly drilled in it.

Music included exercises in reading and writing simple musical compositions.

Hygiene in regard to ventilation, heating and lighting the school room, was fully and carefully discussed.

The grading of country schools was considered and a program for a school of four grades was placed on the board and discussed.

I have thus briefly stated the object of the institute and given a condensed report of the work accomplished.

Too much cannot be said in regard to the intense interest manifested by the pupil teachers. They were punctual in attendance and prompt in the discharge of all duties assigned. The new methods were eagerly accepted and readily grasped by the majority of the teachers, many of them evincing a wonderful aptitude and fitness for the important work they had chosen: and I have no doubt that they will return to their schools with deeper, broader views of the great work of building up the public school system of the State.

Great credit is due to the committee of arrangements, Messrs. Wilder, Dart, Shrewsbury, and others, who made such ample provision for the comfort and pleasure of the faculty and members of the institute. They spared neither pains nor expense to render the stay of all agreeable as well as profitable.

I feel greatly indebted to the citizens of Columbia for their attention and sympathy by their daily visits and words of encouragement.

The institute was visited and addressed by many distinguished persons, among whom were His Excellency Governor Hagood, General Eaton, United States Commissioner of Education, Judges Melton and Crawford, Colonels McMaster and Sloan, and others.

Before proceeding to give the later reports from South Carolina it is advisable to direct the reader's attention to the following circular letter from Dr. Curry, dated July, 1881, announcing that after that date the encouragement of "teacher training" by normal schools and teachers' institutes would be the sole object of the Peabody fund trustees:

CIRCULAR OF THE GENERAL AGENT OF THE PEABODY FUND.

As applications for aid are numerous and misapprehension exists in regard to the distribution of the income of the fund, the following explanations are published:

(1) The Peabody fund is not distributed among the States according to population, nor in proportion to the comparative destitution of any community. The trustees, in their "absolute discretion," withhold funds when they would not promote the general purpose and bestow liberally when they would be productive of beneficial results.

(2) The major part of the income will be hereafter used in the education of teachers for public schools. Aid will be given to normal schools established, supported, and controlled by a State, if they are of a high order. Normal schools where the art of teaching is the prominent branch of instruction will be preferred to normal departments in academies and colleges.

(3) The trustees give to the States scholarships in the Normal College at Nashville. Teachers' institutes conducted by trained experts are also aided; but the instruction must be practical, adapted to public school teachers, and continued for some weeks.

(4) Only public schools carried on under State auspices will be aided.

(5) The entire cost of maintaining schools is in no case met by the trustees. A small part of the current expenses is contributed to encourage and stimulate the people to self exertion in the cause of free popular education. The amount of aid given to schools will be determined partly by the amount of money raised by State tax, local tax, or the voluntary contribution of the people.

(6) As all public schools cannot be aided, a few will be selected at radiating centres, to illustrate by their example the best methods of teaching and to exert a healthful influence in favor of "free schools for the whole people."

(7) The schools selected shall have at least 100 pupils; shall be properly graded, with a teacher for every 50 pupils; shall continue in session ten months in the year, and have an average attendance of not less than 80 per cent. of the enrolled pupils.

(8) Applications for aid must be made before or near the beginning of the school year and have the approval of the local school officers and the State superintendent.

(9) The trustees assume no control whatever over the schools receiving Peabody aid, leaving all questions of selection of teachers, discipline, &c., to the State or local authorities establishing and chiefly maintaining the schools.

(10) Seeking the improvement of State systems of public education, the trustees will act in coöperation with the State educational authorities.

(11) Disclaiming all purpose of interfering with State legislation or the administration of school laws or the action of State boards and superintendents and municipal school authorities, the trustees must have the liberty of performing the duties of the trust according to the known will and express language of the donor of the education fund.

J. L. M. CURRY,
General Agent.

RICHMOND, VA., *July*, 1881.

RICHMOND, VA., *October* 25, 1882.

DEAR SIR: At the beginning of the new educational year, when schools are being organized and communities are forecasting as to revenues, it is proper for me to state that the income of the Peabody education fund will not be this year as large as it has been. The pecuniary help to be furnished must be so used as to duplicate results and to bear most effectively on the end contemplated: the establishment of permanent and well sustained school systems adequate to the needs of the educable population. To make a little serve for much I must depend largely on the advice of superintendents familiar with the whole field and especially with the wants and purposes of the particular communities applying for aid. Very little of the fund can be given in aid of schools. The help, when given, must not be furnished where communities have had three years' aid and where there is not the assurance of permanence in the schools. It is very desirable to stimulate a sounder sentiment in favor of good schools and local taxation. Do me the kindness to suggest, at as early a day as you can, the schools complying with the conditions of the inclosed circular which you will recommend for Peabody aid.

Teacher training is now the prime object of the Peabody trustees, and whatsoever of income is available must be largely applied in that direction. This teacher training can best be done by normal schools for both sexes and both races. These schools are likely to be permanent when under State control and support. Normal schools are an essential part of an efficient public school system. If State legislatures will organize and support such schools, the Peabody education fund will be cheerfully used in aid of them and for their enlargement. Normal schools, while of indispensable importance and to be steadily labored for, will not supersede teachers' institutes. These necessary agencies, if authorized and sustained by State appropriations and conducted by trained experts, will hereafter, as heretofore, be regarded with favor by the Peabody trustees. The institutes to be aided must be continued in session a sufficient length of time to make the instruction profitable and the teaching must be adapted to teachers of public schools. I venture to suggest that a course of study might be arranged so as to run through two or three years. A teacher attending an institute this year should have some assurance of more advanced instruction next year.

Yours truly,

J. L. M. CURRY.

Hon. HUGH S. THOMPSON,
Columbia, S. C.

IV.—THE INSTITUTE FOR WHITE TEACHERS, 1882.

By Prof. M. A. NEWELL, *Principal.*

In compliance with your request I submit a brief report of the normal institute held at Columbia during the month of August, 1882, under my superintendence.

My colleagues were Prof. E. S. Joynes, of the University of South Carolina, the English language; Miss Sarah E. Richmond, of the Maryland State Normal School, written arithmetic and algebra; Prof. Alex. Graham, of Fayetteville, N. C., mental arithmetic and history; Prof. E. W. Riemann, principal of the high school, Lexington, S. C., map drawing and penmanship; Prof. W. H. Witherow, principal of the graded school, Chester, S. C., music; Prof. B. Sloan, University of South Carolina, natural philosophy; Prof. William Burney, University of South Carolina, chemistry; and Prof. A. Reinhard, of the high school, Charleston, S. C., calisthenics. The department of pedagogy, or the principles and methods of teaching, was assigned to me.

On the opening day there were 113 enrolled members, and before the end of the session the number had increased to 306. The following counties were represented: Abbeville, Aiken, Anderson, Barnwell, Charleston, Chester, Colleton, Edgefield, Fairfield, Hampton, Kershaw, Lancaster, Laurens, Lexington, Marion, Marlborough, Newberry, Orangeburg, Richland, Spartanburg, Sumter, and Williamsburg. There were also several students from North Carolina.

The institute was opened on the 1st of August with prayer by Rev. William Martin. His Excellency Governor Hagood being unable to be present, on account of official duties, the address of welcome was delivered by His Honor J. T. Rhett, mayor of Columbia. Superintendent Thompson responded, and, after some brief remarks by Dr. Joynes and myself, the work of organization was begun, and with the aid of the secretary, Prof. L. B. Haynes, and the assistant secretary, Prof. R. H. Clarkson, it was soon completed.

The first hour (9 to 10 o'clock) was devoted to opening exercises and a lecture on "Principles and methods of teaching." At 10 o'clock the institute was divided into four sections, known as A, B, C, and D, and went to the class rooms of Miss Richmond and Professors Joynes, Graham, and Riemann in succession. Each section had two recitations a day of three-quarters of an hour each (10 to 11.30), going three times a week to each of the four professors named above. At half-past eleven the sections returned to the chapel for a singing lesson by Professor Witherow. After half an hour spent pleasantly, and therefore profitably, in singing, they were well prepared for the midday lecture, which was given three times a week by Dr. Joynes on the English language and twice a week by Professor Graham on history. At 1 o'clock Professor Sloan lectured on natural philosophy or Dr. Burney on chemistry. The rooms necessarily occupied by these gentlemen were entirely too small for the numbers that desired to attend. Many students went home at this hour and many repaired to the university library, which the authorities had kindly thrown open to them. In the afternoon Professor Reinhard held his calisthenic classes at the Columbia Female College, where most of the lady students boarded, and Professor Witherow gave instructions to a class in chorus singing. A few evening lectures were delivered in the opera house by distinguished speakers, but usually the evenings were left free for study or social enjoyment.

Considering the season of the year when this institute was held and bearing in mind that many of the students in attendance were exhausted by a hard year's work as teachers and would have to begin another hard year's work as soon as the institute closed, it was thought to be of great importance to avoid overworking the students or tempting them to overwork themselves. The high pressure system under which a five-day institute may be successfully conducted will not work well when the strain lasts for four successive weeks and in the most depressing month of the year. But, under the arrangements adopted at Columbia, there was no apparent loss of vitality. Almost every student remained at his post to the close of the institute, and both students and teachers seemed in better health at the close than at the beginning of the session. Several things contributed to this result: (1) The time that students were *expected* to attend on the exercises was comparatively short, four hours. (2) Attendance on any exercise after 1 o'clock was optional. The afternoons could thus be given to rest by those who needed rest. (3) No work was *required* to be done out of the class room and very little was actually done beyond writing out notes of lectures. (4) The number of optional studies was very small; there was no Latin, Greek, French, German, drawing, or higher mathematics. (5) There were but few evening lectures. (6) The citizens of Columbia, by their hospitable and courteous attentions, made both instructors and students feel themselves at home and caused their leisure hours to pass so pleasantly that they felt rather enlivened and strengthened than wearied by their occupations of the day.

The session was opened every morning with reading of scripture, singing, and prayer, the ministers of various denominations in the city assisting. After the opening exercises it was my custom to dictate a few lines of poetry or a short passage in prose, which the students wrote in their note books and memorized. Next morning they were required to make the quotation individually and in concert. At first the concert recitations were very much out of both time and tune, but in the course of a few days a marked improvement took place. It is a little curious, however, that up to the last the ladies showed a great superiority to the gentlemen in this exercise.

The following are a few of the quotations used:

Work for some good, be it ever so slowly;
Cherish some flower, be it ever so lowly;
Labor, all labor, is noble and holy;
Let thy great deeds be thy prayer to thy God.—*Mrs. Osgood.*

There is a perennial nobleness, and even sacredness, in work.
Were he ever so benighted or forgetful of his high calling,
There is always hope in a man that actually and earnestly
Works. In idleness alone there is perpetual despair.—*Thomas Carlyle.*

In words, as fashions, the same rule will hold,
Alike fantastic if too new or old:
Be not the first by whom the new are tried,
Nor yet the last to lay the old aside.—*Pope.*

If we work upon marble, it will perish; if we work upon brass, time will efface it; if we rear temples, they will crumble into dust; but if we work upon immortal minds, if we imbue them with principles, with the just fear of God and love of our fellow man, we engrave on those tablets something that will brighten to all eternity.—*Daniel Webster.*

Knowledge is now no more a fountain sealed;
Drink deep until the habits of the slave,
The sins of emptiness, gossip and spite
And slander, die. Better not be at all
Than not be noble.—*Tennyson.*

I hold it ever,
Virtue and knowledge were endowments greater
Than nobleness and riches. Careless heirs
May the two latter darken and expend.
But immortality attends the former,
Making a man a God.—*Shakespeare.*

He liveth long who liveth well;
All else is life but flung away.
He liveth longest who can tell
Of true things truly done each day.

Then fill each hour with what will last;
Buy up the moments as they go;
The life above when this is past
Is the ripe fruit of life below.—*Horatius Bonar.*

God doth not need
Either man's work or His own gift; who best
Bear His mild yoke, they serve Him best. His state
Is kingly; thousands at His bidding speed,
And post o'er land and ocean without rest;
They also serve who only stand and wait.—*Milton.*

Some books are to be tasted; others to be swallowed; and some few to be chewed and digested. That is, some books are to be read only in parts; others to be read, but not curiously; and some few to be read wholly, and with diligence and attention.—*Bacon.*

Occasionally volunteers were called for, and quotation after quotation followed in rapid succession till the bell rang for the next exercise. These voluntary quotations showed extensive reading on the part of many students, judicious selection and accurate memorizing.

The remainder of the morning hour (after the opening exercises and the quotations) was usually occupied in a conversational lecture on "Principles and methods of teaching." Considerable time was spent in familiar exposition of a few pedagogic maxims and in illustrating the practical application of these maxims to the teacher's work in communicating instruction.

PRINCIPLES AND METHODS (DR. NEWELL).

(1) *One thing at a time.*—We are conditioned by space and time. Thought seems to annihilate space. My mind carries me in an instant from Columbia to New York, from New York to London, from London to Paris. I have been, mentally, in all these cities within ten seconds, but in only one of them at once. The mind cannot contemplate at any one time more than one object of thought. The object may be rapidly and frequently changed, but rapid transitions are fatiguing and usually cause a loss of mental energy. It is said that Cæsar could dictate to three secretaries at once; but that only means that he had the power to change the line of thought rapidly and resume it without loss of time. Even Cæsar could not think two thoughts at the same instant. Children have but little power of continuous and conscious attention. Their mental faculties resemble their bodily powers in this respect. A child who "runs around" for a whole day without fatigue will be distressed by a two-hour enforced and continuous walk. It is the business of the teacher to see that the child's attention is not distracted by a variety of objects and that it is not wearied by being kept long on the stretch. The teacher should so arrange and divide the subject of study that the things to be observed and the difficulties to be encountered may come up "one at a time." For example: In teaching geography from a wall map, it would be wrong to present a complete map to the eye of a beginner. The multitude of details would distract his attention. The map should contain at first but a bare outline; then the mountains might be filled in; afterwards the rivers; then some important towns; then the principal political divisions, and finally the remaining details. So, in memorizing a poem of several stanzas, the pupil should not read and repeat the whole poem again and again till it is fixed in his memory. He should learn it stanza by stanza; and, if one stanza contains more than one leading thought, each thought should be made the separate object of attention.

The due observance of this maxim will lead teachers to prefer the "topical" method of recitation in all subjects capable of being divided and subdivided into "topics." The skill of the teacher is shown in thus separating a complex object of attention into the proper units of thought.

On the other hand, teachers must be careful not to carry their analysis too far. The fragments may be made so small that the pupil's mind cannot put them together. This is a common abuse of the catechetical method of recitation, and may be illustrated by the questions often found printed at the foot of the page in certain text books. For an example of the wrong use of the catechetical method, take the following questions from a popular Sunday school book on the story of blind Bartimeus, Mark, x, 46–52:

> (1) What was the blind man's cry? (2) How did he show his earnestness? (3) What did Jesus command? (4) What did the blind man do? (5) For what did he ask? (6) What did Jesus say to him? (7) How did the blind man show his gratitude? (8) How should we do like him?

When a lawyer wishes to get all the facts from an honest witness he lets him tell the story in his own way. When he wishes to confuse and break down a witness he questions and crossquestions him.

When a teacher is in doubt whether a pupil understands the answer that he is giving, he must examine him, and, if necessary, crossexamine him, that the reality of apparent knowledge may be tested and proved.

Another and perhaps a still more important use of the catechetical method is for the communication and development of knowledge after the Socratic plan. This requires great ingenuity and much versatility on the part of the teacher, who must adapt each question to the previous answer or else so frame the questions that only one answer shall logically be possible. There is no more powerful agent for stimulating the mind to active and close thought than Socratic questioning; but it is by no means adapted to the work of ascertaining whether a learner has studied his lesson or not.

It must be observed that the maxim "One thing at a time" does not mean that children should in their first year learn the alphabet, next year spelling, next year reading, next year writing; then, in succession, arithmetic, geography, grammar, &c. On the contrary, a child may learn and should be taught a little of all these subjects in his first year, perhaps in his first day, at school. "At a time" with young children means a very short time, and with the oldest it never means a very long time. Five minutes will tax the attention of the youngest; half an hour will be quite enough "at a time" for the oldest pupils in our common schools. If it is a mistake to present too many objects to the mental vision at once, it is just as great an error to keep one object before the eye for too long a time. If the teacher is in doubt, let him err on the side of mercy.

(2) *First the object, then the name; first the thought, then the words which express the thought.*—This is nature's method, though, unfortunately, the reverse has for a long time been the method of the schools. The animals passed in review before Adam and he gave each of them a name. Had he received such teaching as some of us have had, he would have made out a list of names and gone out into the woods to find animals to whom the names could be attached as labels. A considerable portion of many school books is written on this principle;

> For all a rhetorician's rules
> Teach nothing but to name his tools.

The object and the name ought not to be separated. We have an instinctive desire to give a name to every new object of perception. There is no such craving for an object to correspond to a new name; and after a few lessons of the wrong kind children are content to receive names without troubling themselves about the things which these names are supposed to represent. This is one of the worst of all bad mental habits. It not only gives no knowledge: it unfits the mind for receiving knowledge; it substitutes base metal for the genuine and prevents the holder from knowing that it is base. "If the light that is in thee be darkness, how great is that darkness!" When a child who knows nothing of "multiplication" practically is required to say "Multiplication is the operation of taking one number as many times as there are units in another," he adds nothing to his stock of knowledge. On the contrary, he has less desire for knowledge and less ability to acquire it than he had before he learned the lesson. The natural desire to know something is replaced after a few such lessons by an acquired ability to say something, and before long the keen appetite of nature is lost in the artificial satiety of the schools. However close the connection may be between things and words, even admitting that no useful knowledge of things is possible without the corresponding and appropriate words, still with beginners the things or the thoughts must come first and the words afterwards.

It is sometimes said, and by those who should know better, that if children are compelled to lay up the words in their memory the corresponding thoughts will take possession of their minds when they grow older. The thoughts may come, but it will be in spite of the words and not in consequence of them. The habit of using words without any definite corresponding ideas tends to paralyze all the mental powers except the memory, and it tends to weaken even the memory on all sides except one: the memory of words. A child of seven years of age may without much difficulty be taught to memorize the first ode in Horace, and at the age of 16 he may understand the meaning of the words and enjoy the poem; but no one would be so bold as to maintain that the previous memorizing had anything to do with the subsequent comprehension and enjoyment. The mind can hardly be put to a worse use than to be made a stock room for words without meaning, a kind of bonded warehouse, where they must lie inert until the duties are paid and they are released.

(3) *Definitions, therefore, cannot communicate to the young the beginnings of knowledge.*— The etymology of the word definition shows that its office is not to communicate knowledge, but to mark the boundaries of different fields of knowledge. A definition presupposes a knowledge of far more than the thing defined. If I define a square as an equilateral and equiangular parallelogram, I imply by using the word parallelogram a knowledge more extensive than that which is implied in the word square. A logical definition of an object gives the class to which the object belongs and the differences which distinguish it from other objects of the same class. In the foregoing definition the class is parallelogram; the differences, equilateral and equiangular. But it is more difficult for a beginner to acquire a knowledge of the class (parallelogram) than of the object defined (square). It may be said that the learner has already obtained a knowledge of the term parallelogram; but if he has learned it by a definition he must have gone through a similar process and referred parallelogram to a still larger class, from the other members of which it is distinguished by a specific difference. Consequently definitions are not fitted for the communication of the beginnings of knowledge.

And yet our common school text books are crowded at the very beginning with definitions. In arithmetic, definitions of units, integral and fractional; of numbers, denominate and abstract, like and unlike, simple and compound; of figures, of notation, numeration, local value, absolute value, addition, subtraction, multiplication, division &c. In grammar we have definitions of language, words, syllables, letters, sounds, vowels, subvocals, consonants, aspirates, subtonics, atonics, labials, linguals, linguodentals, linguonasals, palato-nasals, palatals, digraphs, trigraphs; nouns, common, proper, abstract, collective, and verbal; adjectives, descriptive, definitive, common, proper, participial, pronominal, numeral, demonstrative, distributive, indefinite, numeral, cardinal-numeral, ordinal-numeral, multiplicative-numeral; of pronouns, personal, possessive, relative, interrogative, simple, and compound; of verbs, copulative, transitive, intransitive, active, passive, neuter, regular, irregular, defective, redundant, and auxiliary; of participles, present, perfect, and compound; of modes, indicative, subjunctive, potential, imperative, and infinitive; of tenses, past, present, future, present-perfect, past-perfect, future-perfect, absolute, and relative; of form, common, emphatic, progressive, passive, ancient, and solemn; adverbs, of cause, manner, degree, place, time, modal, interrogative, and conjunctive; conjunctions, copulative, disjunctive, and correlative; propositions, principal and subordinate; phrase, discourse, paragraph, analysis, synthesis; sentences, declarative, interrogative, imperative, and exclamatory, simple, complex, and compound; elements, objective, adjective, and adverbial, simple, and complex; complex-objective elements, complex-adjective elements, complex-adverbial elements; phrases, appositive, adjective, adverbial, prepositional, infinitive, participial, absolute. and independent; the subject clause, the predicate clause, the relative clause, the appositive clause, the interrogative clause, the objective clause, temporal clauses, local clauses, casual clauses, final clauses, comparative clauses, conditional clauses, concessive clauses. In geography we have definitions of the earth, natural divisions, political divisions, mathematical divisions, physical geography, political geography, mathematical geography, empire, kingdom, republic, state, township, city, capital, metropolis, seaport, foreign commerce, inland commerce, climate, continent, mountain, hill, plain, valley, a map, &c. The last item clearly illustrates the uselessness of definitions to elementary pupils. A map is said to be "a drawing which represents on a plane the whole or any part of the earth's surface." Now, it is utterly impossible for any child to understand this definition unless he has a map before him, and if he has a map before him the definition is entirely useless. If the memorizing of unintelligible definitions were merely useless, we would have to complain only of a loss of time which might have been better employed. But it is not simply useless; it is positively injurious, and entails not only a loss of time, but a loss of mental power. It does not improve the memory and it does weaken every other mental faculty. It contributes more largely than any other agency to the "artificial production of stupidity in schools." The habit of repeating words which convey no meaning to the mind of the speaker tends to deaden the mental powers of children and to reduce them, during school hours at least, to a condition bordering on idiocy. We sometimes hear it said that the time will come when the definitions will be understood; but that time would come much sooner if the mind were not weakened by improper modes of teaching. The most essential of all mental habits for a student, whether young or old, is the habit of attaching some definite meaning to every sentence which he reads.

(4) *The progress of knowledge is from the known to the unknown;* from known causes to unknown effects; from known effects to unknown causes; from known premises to unknown conclusions. As the builder digs till he gets a solid foundation for his house, so the teacher searches diligently for some foundation of previous knowledge on which to erect his intellectual edifice. However little a child may know, a skilful teacher will select from that little the part to which more shall be added. The facts of knowledge when rightly acquired are not creations; they are additions, and addition implies a previous something to which something else is to be joined. The right acquisition of knowledge is a growth and not a simple accretion. It affects the structure of the mind and becomes a part of that structure. That which is new not merely finds a lodgment in the old, but is incorporated in it, modifies it, and is modified by it. We are all conscious of having "shed" a great part of what we thought we had learned in our early days. But real knowledge cannot thus be "shed." It is not a part of the external environment; it is a part of the living tissue, which may change its substance, but never loses its vital power.

The unsatisfactory mental condition of pupils in many schools may be traced to the want of definite and certain elementary knowledge. Here, as elsewhere, "it is the first step that costs." Unless there is a firm footing at the outset every additional step will carry us deeper into the swamp. It is no uncommon thing to find pupils trying to read in the Fourth Reader when they cannot read intelligently in the Second. It is equally common to see them struggling with fractions when they cannot be trusted to add a column of whole numbers. The mad haste "to push ahead," to exhibit at least the sign of progress, if the reality is unattainable, has been the ruin of many a youthful student. Having no certain knowledge as a foundation, the whole intellectual structure is but a castle in the air, without substance and without persistence. Vagueness of intellectual conceptions and skepticism in religious belief spring alike from the want of some fixed fundamental knowledge and faith. The infatuation of parents with respect to this matter is simply wonderful. They will spend money without stint to give their children ac ollegiate education when such an education had become impossible because the foundation has not been laid on which it could be built. Ex nihilo nihil fit. From the unknown we can go only to the unknown. Elementary education is therefore the most important for a nation, because according as it is real or unreal all other education becomes possible or impossible.

(5) *The progress of knowledge is continuous.*—In any one line there are no breaks. In mathematics, from the first conception that one and one make two to the highest solitary mountain peak trodden by Sylvester or Salmon, there is one continuous series of steps, each depending on the preceding and supporting that which is above it. There is the same continuity in language studies and in the study of science, though it may not be quite so obvious. Some thousands of brick and some cart loads of mortar may be dumped in a corner, but they do not make a wall. The bricks must be laid in a certain order and the mortar spread in a certain fashion, so that the whole may be bound together and so that every part may contribute to the strength of every other part. So a heap of unarranged information does not constitute knowledge. Isolated scraps soon perish. Every item acquired must be bound in with other items previously in position, strengthening them and strengthened by them. All that is not thus firmly fastened disappears and leaves no trace behind. The skilful teacher is a careful and conscientious builder. He makes his wall continuous and sees that

the courses are not only laid with regularity but are bound together so as to give and receive mutual support.

(6) *Knowledge proceeds from the concrete to the abstract, from the particular to the universal.*—This is strictly true only of the beginnings of knowledge. There comes a time when we are able to deduce particular facts from general laws; but in the beginning we must pursue the inductive method and "judge of particulars one by one." Hence such parsing as the following is wrong: "John is a noun because it is a name;" it ought to be, "John is a name; therefore it is a noun." Does this seem to be a distinction without a difference? A mere change of order? So putting the cart before the horse is a mere change of order; but it is also a great waste of energy. "Children can be taught the first form as easily as the second." Granted; children will memorize whatever they are compelled to memorize. But the question for the rational teacher to determine is: By what path has the mind of the child travelled from the known to the unknown? Investigation and reflection will show that, whatever may be the apparent path, the real path has been from particulars to universals. Whatever a child may *say* in his parsing lesson, in reality he makes the acquaintance of a large number of nouns, separately and singly, before he forms an abstract conception of what a noun is. The recognition of this philosophical truth would revolutionize the study of grammar in many of our schools.

(7) *Elementary knowledge goes from the whole to its parts.*—A child knows a chair, a table, a watch, as wholes before he can distinguish the parts of which each of these objects is made up. Children learn to speak sentences before they know the several words separately. Experience seems to contradict this; infants speak single words at first, not groups of words. But the contradiction is only apparent. The single word is the equivalent of a sentence. "D'ink" from a child's lips is a sentence abbreviated. It stands for "Give me a drink." The sentence is the unit of expression and is learned as a whole before the parts can be recognized. It is this that gives children their great superiority over adults in learning languages. The child is content to take phrases and sentences as wholes and to use them as such. The adult must take the expression to pieces and make the acquaintance of each word that it contains. The child hears *kesk s'la* (Qu'est-ce que cela?) and uses it without further investigation. The adult must know that it is made up of words, and he wants to know the significance of each of them. The consequence is that the child, going from "the whole to the parts," learns more of a language in five years than the adult, going from the parts to the whole, can learn in ten. The natural working of the juvenile mind is synthetical or constructive; it loves to create, to produce. The adult mind, on the contrary, is analytical; it delights in taking things to pieces and examining the relations of the component parts. It follows that the method by which the mature student learns Greek is not necessarily the method by which a child should be taught English; yet in most of schools grammar and parsing and analysis are taught before composition. The cart before the horse! Is it any wonder that the progress is slow?

(8) *Children learn to do things by doing them.*—They learn to walk, by walking; to swim, by swimming; to dance, by dancing. So children should learn to spell, by spelling; to read, by reading; to write English, by writing it. What is spelling? Not the art of naming the letters that go to the formation of a large number of difficult words which in all probability will never be used, but the art of writing those common words which everybody knows and is expected to use. This is what ought to be taught in our primary schools: the art of *writing* the common words of the English language; and there is only one way of learning it, namely, by writing these words. Oral spelling (so called; there is no such thing outside of a school-house or a lunatic asylum as oral spelling; all true spelling is by writing or printing) is no preparation for written spelling. On the contrary, it is a great hindrance. After the eye and the hand have been thoroughly trained to discriminate and execute, oral spelling may be a useful school exercise to teach the forms of the more difficult and

uncommon words, such as are rarely met with in ordinary reading, but which every person of liberal culture is expected to be acquainted with. But I am convinced that the entire disuse of oral spelling in primary and intermediate schools and an exclusive reliance on the eye and the hand for training would remove nine-tenths of the difficulty that is found in learning to spell. The way to the only practicable "reform" in spelling lies in this direction. When we recognize the fact that our language is not and cannot be made, except in a very slight degree, phonetic, and adapt our method of teaching to this undesirable but unalterable condition, by excluding the ear and the mouth from the process of spelling, and using the eye and the hand alone, we shall stand in but little need of further "reform."

In like manner, if children are to be taught to write English, they must learn this useful and indispensable art by practising the writing of English; not by committing to memory the definitions and "rules" (falsely so called) of grammar, not by parsing, not by analysis, with or without diagrams, but by writing English. First attempts in this as in all other studies will be difficult and imperfect, but practice will lead to facility, and, if not to perfection, at least to improvement. School children should be brought up by hand rather than by mouth. A slate and pencil should be their first equipment for the struggle of learning; the right use of the pen is the crowning glory of the finished scholar. The following scheme may assist teachers in systematizing their work in teaching "composition," as it is called: Teach them (1) to write words from a copy on the blackboard in script; (2) to write words from First Reading Book; (3) to write sentences from Second Reading Book; (4) to write paragraphs from Third Reader; (5) to write lessons from Fourth Reader; (6) to write paragraphs from dictation, Fourth Reader; (7) to write lessons from memory, Fourth and Fifth Readers; (8) to turn poetry into prose, Fifth Reader; (9) to write letters, (*a*) business, (*b*) friendly, (*c*) complimentary; (10) to write out a short story or anecdote read once by the teacher; (11) to write an essay on a given subject, the teacher giving the arrangement and supplying the material; (12) to write an essay on a given subject, the teacher indicating the sources of information.

The teacher should be careful never to ask for bricks without furnishing the straw.

(9) *Knowledge proceeds from the vague to the definite.*—This is true to a certain extent of all students at the beginning of any new study, but it is especially true of children. Those who remember their first introduction to the calculus will recollect how vague, indefinite, impalpable their first conceptions of the subject were. They saw as through a glass, darkly. By slow degrees the object of their thoughts seemed to come nearer, to assume a definite form, to become capable of close contact. The blind man suddenly restored to sight saw "men as trees walking." Children at first see nothing as it really is; their organs of sight, physical and mental, have not been adjusted. The novice with his eye at a telescope sees nothing but a blur of light till he has learned to find the proper focus. Even then he sees but little of what the practised astronomer can see, for his eye has not been trained. When we look at a printed page, we see horizontal lines of print, words of different sizes, and letters of definite outline. The child at his first look sees nothing but black marks on a white ground, without order and without form. In the course of time the gray mass resolves itself into lines, the lines into words, the words into letters. With some this is a very slow process, and the teacher can only wait till nature has made the necessary adjustment. Similar phenomena may be observed at the beginning of every new study; the morning mists before the noontide sun. It is sometimes advisable to stop in the middle of this period of mist, before the mind settles down contentedly into a habit of indefinite thought, and to turn the attention of the class for a few weeks or months to another subject. The change brings rest, relief, strength. On resuming the previous study the fog will probably be found to have disappeared.

The limits of this report make it unadvisable to carry these sketches further. Enough has been given to indicate the nature of the topics and the mode of treatment. In addition to the foregoing, lectures were delivered by the superintendent on the following subjects: "Telling is not teaching," "What we teach," "Why we teach," "How we teach," "How we ought to teach," "The use and abuse of memory," "School and family government," "Graded schools," "Uniform grading of State schools," "Three methods of teaching elementary reading."

A very pleasing feature of the institute was the appearance at every session of a number of girls too young to profit much by the ordinary exercises, but enthusiastic in their desire to learn something. For their benefit and encouragement I formed a class of juveniles for the study of "Facts and dates in history," after Bem's method. With the aid of a blackboard ruled into one hundred squares, each square representing one year in a century, and some colored crayons, the children commenced their studies with alacrity and soon made surprising progress. The lesson was given out of school hours, but many teachers remained to witness it.

THE ENGLISH LANGUAGE (DR. JOYNES).

Dr. Joynes's lectures, which were delivered at noon, after the return of the sections from the class rooms, attracted a large audience outside of the membership of the institute, and were listened to with an intelligent interest which never flagged, but rather increased towards the end of the course. The syllabus shows the general plan, but the sketch that follows gives a very inadequate conception of his masterly treatment of the subject:

Lecture I. Introductory. Language in education. The value of language study for discipline, for knowledge, for use.

II. The mother tongue. The study of English in relation to the study of other languages, as to subject matter, methods, results.

III and IV. Characteristics of the English language as to its grammatical forms.

V. Characteristics of the English language as to structural forms and logical and literary powers.

VI and VII. Methods of grammar. Parsing. Analysis. Idioms. Definitions. Rules. Fact and theory.

VIII. Terminology. Use and abuse of text books.

IX. Review. Grammar compared with other aspects of language study. Reading. Composition.

X. Characteristics of the English vocabulary.

XI. Special need of word study in English.

XII. Study of literature in schools.

In the absence of fuller notes it would be impossible to give any adequate outline of this course. It is only just to say that it constituted one of the chief attractions of the institute, not only to the pupils proper, but especially to the most intelligent and cultivated people of Columbia, many of whom attended the whole course with unflagging interest.

ALGEBRA AND ARITHMETIC (MISS RICHMOND).

Two classes were formed in algebra: one for beginners, the other for those who had made some progress. The beginners advanced (in four weeks, reciting every other day) as far as simple equations; the other class, to the end of equations of the second degree. This point marks, in my opinion, the limit of algebra as a disciplinary study and the beginning as an instrument of investigation. It is, therefore, the place at which algebraic study in our common and high schools may fitly close.

In the arithmetical class, Miss Richmond's aim was to present the methods of teaching elementary pupils from the very beginning of the study to the end of vulgar and decimal fractions, denominate numbers being excluded as offering no new principles and needing no new methods. The law of "parsimony" was vigorously enforced: no new agency or device or rule called into requisition so long as the old was sufficient for the purpose.

A lady was selected for this department for two reasons: first, because in an institute or school where more than half of the students were ladies, it was eminently proper that there should be at least one lady in the corps of instructors; and, secondly, because there seemed to be a need of something to counteract a prevailing opinion that women are less fitted for such studies than men. It need scarcely be added that Miss Richmond was both popular and successful.

MENTAL ARITHMETIC (PROFESSOR GRAHAM).

Each section recited on alternate days. The attention of the classes was especially directed to the analysis of problems and to the mental operations involved in the solution. To many of the students this was a new study, somewhat bewildering at first, but becoming more and more fascinating as they advanced. The progress made by most of the members was very satisfactory.

HISTORY (PROFESSOR GRAHAM).

Twice a week Professor Graham conducted an exercise in history before the entire institute, assembled in the chapel at noon, and in the presence of a large audience of citizens. He took as his theme the early history of Rome, legendary and semilegendary. This he told in a series of familiar discourses, in a style adapted to the comprehension of children, but attracting the attention of old and young by its quaint simplicity and dry humor. That this kind of story-telling is a very efficient instrument for the communication of historical information was proved by the prompt and full answers given by the class to the questions proposed in several searching examinations. It was also shown that the direct contact of pupil and teacher is, in such subjects, to be much preferred to the rote method, which raises the text book as a partition wall between the teacher and the taught.

MAP DRAWING (PROF. E. W. RIEMANN).

Lesson I. Explanation and illustration of the different methods of representing a portion of the earth's surface on a plane; orthographic projection for surfaces of small extent; stereographic projection for the hemispheres; Mercator's projection for the whole surface of the earth and navigation; charts; construction of meridians and parallels.

II. The preparation of blackboards and paper for copying maps by dividing them into squares. Advantages of this method as compared with triangulation in point of accuracy. It requires also but little training.

[NOTE.—If the object to be attained is a perfect copy of a map, then without doubt the method of squares is the best; but if the object is to impress the outlines, physical features, and political divisions of a country on the memory, my experience leads me to prefer the method by triangulation, though it may be harder to learn.—M. A. N.]

III. Outlines of the map of Southwestern Europe, drawn on the blackboard by the teacher and copied by the students on paper with lead pencil.

IV. Inking outlines and representing oceans and seas by faint lines drawn parallel to coast line.

V. Lettering.

VI. Representation of mountains and rivers.

VII. Location of cities; naming of gulfs, bays, straits, islands, capes, &c.

VIII. Finishing, framing, and mounting of maps.

Seventy-five per cent. of all the enrolled students attended every lesson. Thirty per cent. finished their maps; ten per cent. showed great care and skill, and three maps were almost perfect. The majority of the students showed extraordinary interest, and a great number will without doubt introduce map drawing into their schools next session.

SINGING (PROFESSOR WITHEROW).

Singing was practised in two ways: as a study and as a recreation; in both it was an acknowledged success. As a recreation, a relief from dry study, a change in the direction of the current of thought, a bridge from one study to another, it was indispensable. But at the same time the students learned how to teach the elements of vocal music and became convinced of the value of singing as one of the "common school branches." In addition to his constant attendance at every session of the institute from the opening to the close, always ready when called on, Professor Witherow gave instructions to a "chorus class" every afternoon at the Methodist Female College. This class rendered valuable aid in leading the daily singing of the institute.

CHEMISTRY (DR. BURNEY).

Lecture I. Distribution and different states of matter; chemical action; elements and compounds; atoms and molecules; chemical notation.

II. Oxygen; ozone; hydrogen; water.

III. Nitrogen; ammonia; oxides of nitrogen.

IV. Carbon; carbon dioxide; the atmosphere.

V. Carbon monoxide; marsh gas; combustion; chlorine.

Two points were kept steadily in view by the lecturer: first, to state and explain first principles in such a way that the students might afterwards read intelligently and without serious difficulty a treatise on chemistry; secondly, to present the illustrative experiments in such a way as should not merely assist the student in comprehending what was taught, but should also stimulate and help him to make similar experiments for the benefit of his young pupils. In both respects Dr. Burney succeeded. It is only to be regretted that his lecture room was so small that not more than half of those desirous of attending his lectures could find seats.

PHYSICS (PROFESSOR SLOAN).

Professor Sloan's room was also crowded every day by an intelligent and sympathetic audience, but very many were unable to obtain admission, even "standing room" not being available. The following syllabus indicates the course, but the great charm consisted in his beautiful experiments and appropriate illustrations:

I. Short sketch of fundamental notions. Modern notion of energy and the principle of its conservation particularly dwelt upon.

II. An experimental study of slow vibratory motion, the key to molecular physics.

III. Nature of sound. Energy of sonorous vibrations.

IV. Various phenomena of sound discussed and illustrated.

V. Current electricity a form of energy. Illustrated.

VI. Light. Simple and cheap pieces of apparatus exhibited and explained.

CALISTHENICS (PROFESSOR REINHARD).

The calisthenic classes were held in the afternoon in the chapel of the Methodist Female College. The importance of physical exercise as part of the routine of common school work was shown both by theory and practice. A very large proportion of the students will, when they become teachers, fully recognize the necessity of physical culture and accord it a fair proportion of their time and energy.

Lectures and addresses.—Addresses before the institute were delivered by Rev. G.W. Holland, president of Newberry College, on "Gentility," and by Professor Reinhard on "The physical problem." In addition to the addresses heretofore noticed, by Governor Hagood, Mayor Rhett, and Superintendent Thompson, there were short morning addresses by Rev. Dr. Girardeau, Rev. A. M. Chrietzberg, Rev. S. A. Weber, and Hon. L. F. Youmans, attorney general of the State.

Dr. J. H. Carlisle, president of Wofford College; Rev. W. M. Grier, D. D., president of Erskine College; Rev. F. P. Mullally, D. D., president of Adger College; and Prof. N. F. Walker, superintendent of the South Carolina Institution for the Education of the Deaf, Dumb, and the Blind, delivered lectures in the evening at the opera house. These lectures, which were largely attended, added much to the value and to the interest of the institute.

Examination.—On the day before the close of the session an examination was held of such members of the institute as wished to obtain teachers' certificates. There were twenty-nine candidates and nine of them received certificates, three for three years, three for two years, and three for one year. No certificate was issued to any one who answered less than 70 per cent. of the questions asked. The result of the examination was, on the whole, satisfactory, though the questions were more difficult than some of the candidates expected.

The Daily Register.—This paper was found to be an invaluable aid both to the students and the instructors. Every morning we found a brief but comprehensive and accurate summary of the proceedings of the previous day. This saved many members from the necessity of taking notes and enabled them to give more continuous attention to the speakers. It also kept the general public en rapport with the work and the workers. Doctor Joynes used the morning paper as his text book in his admirable class lessons on the English language and found it well suited to his purpose. If this example should be the means of inducing teachers to make more use of the newspaper and less of the text book in language lessons, it were a "consummation devoutly to be wish'd." It is not necessary, however, to limit the application of the newspaper to the teaching of language. It will be found very suggestive of practical lessons in geography, history, commercial arithmetic, and social and political economics.

V.—THE INSTITUTE FOR COLORED TEACHERS.

By H. P. MONTGOMERY, *Principal.*

I herewith submit my report of the Colored Normal Institute held at Columbia during the month of July.

The session opened on July 3 and closed the twenty-eighth day of the same month, covering a period of four weeks. The regular attendance was about two hundred and thirty-five teachers. For the purpose of giving a thorough drill, the teachers were divided into two classes, according to the grade of their certificates. Those holding first and second class certificates were placed in the advanced division; those holding third class certificates composed the second division. The first division took up advanced arithmetic, beginning with percentage; algebra, beginning the subject; advanced grammar; advanced reading; advanced drawing. The second division started with elementary grammar, map drawing, and drawing. Music and penmanship were taught as a whole.

In teaching these subjects our aim was twofold: first, to give the teachers a complete mastery of the branches; second, to give the best methods of teaching them in their schools.

Reading.—Intelligent reading was the main object. Attention was directed to the different kinds of ideas and the proper manner of rendering them with pleasure and profit to themselves and others. The words were thoroughly familiarized, and then the thought represented was dwelt on until readily grasped. The words likely to be mispronounced or misunderstood were called out, placed on the board, and studied as to their spelling, pronunciation, and meaning, and finally, to make sure that they were comprehended, sentences were called for in which these words were properly used. By so doing it was at once evident that the learner's vocabulary had been increased and enriched by something that enters as part and parcel into his mental furniture. A spirit of constant self questioning was inspired, so that, instead of being merely the naming of the gray characters on the page, reading becomes instinct with life—the thoughts embodied touch a responsive chord in the mind. To crown all, the pupil teachers were called upon to give in their own language the salient ideas embraced in the piece read.

While studying the reading lesson, all proper names, all allusions, should be so many opportunities to wander out into the broad fields of literature. This practice is beneficial in the highest degree and wide reaching in its effect upon the intellect. A habit of research and inquiry is created; the mind is on the alert at all times. Variety in the selections for reading was emphasized. To be able to read one or two pieces artistically, and may be apishly, is no gain to the pupil. Matter is more than manner in this branch. Grasp and feel the ideas, and usually the manner will be effective. The importance of thorough preparation on the part of teachers was forcibly presented, for he who would make good readers should himself read well. Very many useful hints were thrown out about creating and keeping up the interest in reading classes.

Primary reading.—No branch taught in our schools presents more difficulties to the minds of children than elementary reading. Our language is full of knotty points, which must be divided and subdivided by the teacher until he can, according to Pestalozzi, present but one difficulty to the child at a time. The absurdity of the old and tedious methods was pointed out and the new and excellent method by Mrs. Rickoff, as set forth in the Appleton Readers and Chart, substituted. Frequent drills in phonic spelling and reading were given.

Grammar.—Though usually deemed an extremely dry and uninteresting study, grammar may be made very attractive and profitable to pupils. A practical, intelligent application of what is daily learned—not making the brain a garret for storing away technical definitions and meaningless rules—should be the chief object in this branch. Great stress was put upon analysis, because it alone gives an insight into the structure and genius of the language.

By means of diagrams the sentence was mapped out so that the eye could behold the offices and relations of the different parts. Following close upon the heels of analysis comes synthesis: sentence-building, with the materials already familiarized. While learning to construct sentences, pupils were also taught punctuation, the true method to be followed in this too often neglected matter. Too much could not be said in regard to the importance of a constant watch over the expressions of both teachers and pupils. Eternal vigilance is the price of correctness of language.

False syntax was brought forward as a means of cultivating a discriminating and correct taste in the use of language. Idiomatic expressions were made the subject of study, as well as the arrangement of the parts of sentences. It was fully enforced that sense and sound were the prime things in putting sentences together. It was shown that taking extracts from our best writers in prose and verse and carefully and critically examining them is an excellent way to acquire facility and beauty of expression. Attention was pointedly directed to the daily practice of writing short compositions embracing a reproduction of reading lessons. These should be short, for little and often counts far more than long articles, calculated to tire and turn this pleasing exercise into a hated task.

Algebra.—This branch was discussed as a means of mental discipline and as indispensable to all true and healthy progress in the higher mathematical studies. Very great stress was laid upon the necessity and utility of studying the various processes involved as *reasons*, not as mere mechanical operations. Rigid demonstration, the *why* more than the *how*, was shown to be the main object in teaching this most valuable part of the great subject of mathematics. The difference between arithmetic and algebra was explicitly brought out, especially the contrast between the decimal or arithmetical notation and the literal or algebraic. It was clearly shown that the processes of arithmetic are simply solutions for particular cases, whereas each solution by algebra becomes a general one: all results are general formulæ. Terms and definitions were fully presented, much importance being attached to the definitions, since they are, as it were, finger posts along the journey. These should generally be learned verbatim, because they are usually framed in pointed, accurate, and precise language; they are, in fact, epitomized forms of mathematical truth. In this way the habit of using language with scientific precision will be early acquired.

The signs plus and minus were exhaustively treated. Addition, subtraction, and multiplication were fully discussed and explained. Before taking up the subject of division the institute closed. Enough has been said to give a good insight into the methods pursued in this branch, which has been justly called "the science of the equation;" and the equation is the grand potent for solving all mathematical problems.

Penmanship.—In penmanship the Spencerian system was taught according to the latest and most improved method. We had, through the courtesy of Professor H. C. Spencer, every aid necessary to make the course successful.

Great attention was paid to correct position of the body, penholder, and book. All the blackboard exercises were carefully followed, in order to bring about as great a degree of proficiency in flexibility of movements as possible.

The analysis of letters and figures was thoroughly taught, so that each teacher was enabled to explain the lesson to his school.

Map drawing.—Apgar's system was used as a basis, but, for the sake of greater simplicity, was many times slightly altered. We began with South Carolina and ended with Asia. Each continent was accurately drawn, with the principal peninsulas, capes, mountains, lakes, and rivers. Especial attention was called to the accuracy of the maps.

The importance of map drawing as a valuable aid to the study of geography and history was dwelt upon.

Drawing.—As the nation advances in civilization, the broader and more comprehensive become our views of education and of what is necessary thereto. As an outgrowth of this progress, drawing is no longer considered one of the so called fine arts, to be taught only as an accomplishment and confined only to those who feel themselves gifted with uncommon genius, but it is brought within the reach of all by being recognized as one of the common school studies.

In South Carolina every teacher was anxious and willing to learn what he could and receive such help as would enable him to go still further when left to his own resources. Owing to the shortness of the course, a year's work had to be compressed into four weeks.

Bartholomew's system was used, books 4 and 5 being used for actual work. A little geometrical drawing was introduced, and it took well. Dictation and the making of designs occupied some time, many showing considerable talent and skill in the latter.

The time spent in each of these studies was one hour. The principal object was to teach the teachers how to awaken a strong interest in their pupils, a hungering and thirsting after knowledge, so that they will not tire in the search nor rest satisfied, but will be constantly asking for more.

Visitors.—Many distinguished persons visited the institute, among whom were His Excellency Governor Hagood, His Honor Mayor Rhett, of the city, Right Reverend Bishop Dickerson, Hon. S. Dibble, Hon. C. M. Wilder, Mr. J. R. Abney, and Rev. E. M. Brawley. The governor addressed the teachers as a friend and as the chief executive of the State of South Carolina. The mayor expressed his hearty sympathy and interest in the work of the teachers. Bishop Dickerson gave a very able and eloquent lecture on the "Culture in common life," and Rev. Mr. Brawley spoke on "The memory." Mr. Dibble addressed the institute on "National aid to education." Other gentlemen spoke on topics bearing on the work of the teacher.

Examination.—At the practical completion of the institute an examination for State certificates was held. This was the first of three to be held for life diplomas. Seventeen candidates entered, of whom four succeeded in obtaining the requisite percentage.

I desire to tender sincere thanks to the superintendent for his kindness and excellent counsel during the progress of the work. To him the people of the State owe a debt of gratitude for his devotion and untiring efforts on behalf of popular education in South Carolina.

B.—PEABODY INSTITUTES IN VIRGINIA.

The normal institutes held last summer at the University of Virginia and at Lynchburg, for white and colored teachers, respectively, constituted so important a feature of the year's work that it seems proper to notice them with some particularity. Something similar had been attempted in Shenandoah, Rockingham, Franklin, Lee, Scott, and other counties by local superintendents and individual teachers, with varying degrees of success, but with useful results in every case. These enterprises usually received aid from the Peabody fund, through the State superintendent.

But the chief value of these schools, and of the county teachers' institutes which have been held from the beginning, was in showing to teachers and to the public generally local deficiencies and pointing out the importance of professional study. In most counties these sentiments have been slow in taking hold, and it was not easy to assemble the teachers generally, even of a single county, for professional instruction. But the indications were that, taking the State over, sufficient appetite had been created to render hopeful an effort to bring together large bodies of teachers for serious and somewhat prolonged normal instruction. The State superintendent was the more encouraged to undertake this by the success of a similar enterprise in North Carolina. The only resource for defraying the necessary expenses of such schools was in the Peabody fund, the legislature of Virginia never having appropriated or authorized the use of any money for the preparation of teachers. Dr. Sears being made acquainted with the plan, he placed at the disposal of the superintendent $3,500, to be used, so far as might be needed, in paying professional instructors, in assisting needy teachers who might otherwise be unable to attend, and in paying incidental expenses of the schools.

1.—THE STATE INSTITUTE FOR WHITE TEACHERS, UNIVERSITY OF VIRGINIA. 1880.

By Hon. W. H. RUFFNER, *State Superintendent.*

In August, 1879, A. H. H. Stuart, rector of the University of Virginia, was asked whether it would be agreeable to the authorities to permit a State teachers' institute to be held during the next vacation in the university buildings, to continue six weeks. The plan was submitted for ratification to the members of the board of visitors, every one of whom sanctioned it without hesitation. In due time three professional instructors were engaged for regular work, the university professors were all invited to deliver lectures, and other distinguished gentlemen were applied to. The aim, however, from the beginning, was to give large prominence to such exercises as bore directly upon the daily work of the primary teacher and to introduce general subjects only as an afternoon attachment. The regular instructors engaged were Prof. M. A. Newell, principal of the State Normal School of Maryland and State superintendent of schools; Rev. W. B. McGilvray, principal of the Leigh Street Public School, Richmond, Va.; and Prof. A. L. Funk, formerly of Virginia, then of Red Cloud, Neb., all men of experience and skill in the public school work and all familiar with the processes of the new education.

Ascertaining that the floor of the large public hall, after the attachment of desks to the benches and allowing sufficient elbow room for writing, would not seat comfortably much over five hundred persons, I determined to limit the school to that number. Even with this number, eight or ten lecture rooms would be required for section drill, which, besides the accommodation of Professor Minor's Summer Law School, would be as many as could be had. The most difficult point was to arrange for the boarding and lodging of five hundred teachers at the low rates required by their small incomes; and no little embarrassment was occasioned by the fact that probably more than one-half the persons attending would be ladies, who would have to be quartered largely in accommodations intended for male students only. It was ascertained that the boarding houses generally would charge from $15 to $18 per month, but, by crowding, a few could receive ladies at $12.50. The messing system, however, promised board and lodging at $10, or but little over $10, per month. Hence messing was determined on as the chief, though not sole, dependence. Dawson's row and Monroe hill were set apart for ladies; Carr's hill and the west range of dormitories were assigned to gentlemen, and all put in charge of the regular university club caterer. The university gave all the rooms free of rent, but a kitchen had to be built, kitchen and chamber furniture had to be rented, servants hired, and food bought, and a managing committee of teachers appointed, so that the style of living would be such as the parties concerned might desire. The caterer was to receive $1 a month from each member of the club and no profits to be charged.

It was necessary to expend some hundreds of dollars of the Peabody allowance in erecting structures and making changes, but the most of these would be available for future use.

The main point, of course, was securing the attendance of teachers. This was done by notices and explanations in the Educational Journal and by distributing circulars among teachers. All who designed to attend were requested to send their names and post office addresses and to say whether they wished to enter one of the mess clubs or, if not, to select one of the private boarding houses, a list of which was furnished, with prices. The first circular to teachers was published in the March number of the Educational Journal, and a stream of names began to flow almost immediately, and by the first of May the maximum of five hundred was enrolled. Prompt notice was given of this fact, but several hundred additional names came in. The indications were that the number could be increased to one thousand. All that could be done was to promise places to the belated applicants so far as vacancies might occur by the failure of the original parties to attend. Experience showed that this was a contingency for which a larger allowance should have been made. The failure to get their money and the general paucity of resources kept many of those first enrolled from attending.

The school was advertised to begin July 14, at 5 P. M., and to close August 25, at 12 M. At the time appointed, the great hall of the university was filled with people, below and above. The opening exercises consisted of prayer by the Rev. T. W. Bledsoe, an address by Governor Holliday, as president of the State board of education (under the auspices of which the enterprise was conducted), and an address by Professor Newell, who was to act as principal of the school. The next morning the regular school exercises began and were continued day after day successfully and without intermission to the close. The usual routine was to assemble the whole body of teachers in the public hall at half-past eight in the morning, commence with short devotional exercises, follow with two and sometimes three lectures of forty minutes each on the science and practical methods of school teaching, interspersed with vocal music, calisthenics, and brief recesses.

At 12 M. the school was divided into 8 sections and marched into as many lecture rooms, to be further instructed and drilled by repeaters, who were selected teachers of ability, and in some cases county and city superintendents, and who acted under the supervision and with the assistance of the regular instructors. At 5 o'clock P. M. the school was again assembled in the public hall to listen to a lecture from some one of the university professors. This order was partially interrupted by lectures from the superintendent of public instruction and others whose names will be mentioned in the sequel.

The total enrolment of the actual school was 467, of whom 312 were ladies and 155 were gentlemen. There were more cases of tardiness of arrival and shortness of stay than was desirable, but there was singular promptitude and steadfastness with the great body of the teachers These came to learn and improve their opportunities to the utmost. And a more orderly, agreeable, patient body of people never spent six weeks together anywhere. Most of them were actual public school teachers, some were preparing to teach, and a few were private teachers. Sixteen county and city superintendents of schools attended more or less of the time, and some of them were earnest students and helpers during nearly all the time.

Besides the regular instructors, including the State superintendent, lectures were delivered by General John Eaton, United States Commissioner of Education; Rev. A. D. Mayo, of Boston; Prof. N. K. Davis, C. S. Venable, J. W. Mallet, F. P. Dunnington, T. R. Price, G. F. Holmes, William M. Thornton, F. H. Smith, of the faculty of the University of Virginia; Col. T. L. Preston, near the university.

Religious service was held every Sunday.

A large number boarded at boarding houses and a still larger number at the mess clubs. Of the latter a majority were ladies. There was some trouble—which need not have occurred—in managing the mess affairs, and the expense slightly exceeded the estimate, but even this, the most difficult point of the enterprise, in consequence of good management by the committees, may be pronounced a success. In point of good behavior and social enjoyment, especially with the ladies, the clubs were simply delightful. The university professors who were at home exerted themselves to make the sojourn of the teachers agreeable as well as useful. And we are under special obligations to Dr. James F. Harrison, chairman of the university faculty, for his friendly and efficient assistance in making the preliminary arrangements, as well as in promoting the good of the school while in session. The library and the Lewis Brooks Museum were made accessible to the teachers.

I have been thus detailed in my statements concerning this school because it is the first effort on a large scale ever made to give a systematic course of instruction to Virginia teachers and to test the demand for such instruction among the teachers themselves. On both points the result was most satisfactory. From the nature of the case the instruction could not be equally adapted to the wants of all who assembled. Many of the teachers were from our larger cities and towns, Petersburg leading in number, and those teachers were already practising many of the improved methods, which were entirely new to the great mass of our teachers. But there was a great amount of instruction given which was highly edifying to all, and in respect to the large majority of those present the whole course of instruction was in all its parts highly valuable and interesting. Experience has shown that by a system of gradation the pupil teachers might be spared the necessity of waiting upon those instructions which they no longer need.

The other point was most emphatically demonstrated, namely, that there is among our Virginia primary teachers a widely diffused desire for professional education;

and it is to be earnestly hoped that this effort, imperfect as it was, will rapidly hasten the time when our legislature will see the wisdom of at least allowing a little of the school money to be used for the vital work of improving the quality of the teaching in our schools. A normal institute, such as has been described, is not a good substitute for regular normal schools with courses of two or three years; but it is important as a provisional enterprise until something better can be done.

II.—THE COLORED NORMAL INSTITUTE AT LYNCHBURG, 1880.

By Hon. W. H. RUFFNER, *State Superintendent.*

This institute was entirely successful and full of interest. The prearrangements for this began simultaneously with those made for the university school. After consultation with Dr. Ro. S. Payne, president of the Lynchburg city school board, and Superintendent Glass, I assembled as many of the leading colored citizens of Lynchburg as could be brought together on short notice, in order to enlist their sympathies and coöperation in providing for the wants of the school. Next, a committee of three colored citizens—namely, Messrs. Thomas A. Gladman, Leander Harrison, and Armistead Pride—were appointed to search for a suitable lecture room and cheap boarding for the pupil teachers and their instructors. This excellent committee gave a great deal of their time and labor gratuitously in making all needed preparations, in corresponding with applicants, and finally in receiving and locating them on arrival. They were actively assisted all through by Superintendent Glass and in an important emergency by Maj. T. J. Kirkpatrick. The lecture room of a colored Methodist church, standing on a lot adjoining a public school-house, was obtained for lectures, from which the sections could readily pass into the school rooms for drill. For the faculty I was fortunate in obtaining an excellent corps of colored instructors, namely, Mr. H. P. Montgomery, Mrs. H. P. Montgomery, Prof. W. S. Montgomery, of Alcorn University, and Mr. H. F. Grant, of Washington City. These were all well qualified by character, education, and experience for the work of instruction and made a fine impression not only with the teachers but with the citizens of Lynchburg.

The teachers were received into families as boarders at the low rate of $8 per month.

The school was opened July 15, one day later than that at the university, and continued full six weeks without interruption.

The opening exercises consisted of prayer by the Rev. W. F. Armstrong; an introductory address by Lindsey Hayden, esq.; an address of welcome by Maj. Thomas J. Kirkpatrick; and an address by Mr. H. P. Montgomery, explaining the real objects of the normal school.

The total enrolment of teachers was 240; of these 130 were males and 110 females. The behavior was excellent and an earnest spirit of improvement was manifested from beginning to end. The instructions were practical and thorough and in accordance with the best modern methods. Each of the primary branches was taken up and the best methods of teaching reading, writing, arithmetic, geography, and grammar were expounded; also, the leading points in school organization and discipline; and the explanations of the lecture room were enforced by repetition and practice in the section rooms.

During the continuance of the school there were daily visits from members of the school board and from citizens of Lynchburg and also from persons from a distance; and numerous lectures were delivered by persons not connected with the school, to wit, from the State superintendent of public instruction; Dr. A. D. Mayo, of Boston; General Eaton, United States Commissioner of Education; Professors Jones and Vassar, of Richmond; Prof. J. L. Campbell, of Lexington; Rev. T. W. Sydnor and Mr. Robert Hall, superintendents of counties; Dr. Blackford, Major Flood, and Messrs. McKean, Brent, Britton, Wyatt, and others.

Altogether the school was full of interest and encouragement and was a striking phenomenon among current events. None who witnessed any considerable part of the proceedings could doubt either the capacity or the desire of the negro for intellectual and, especially in this case, for professional improvement. The effect of the school upon those who attended, and through them upon the children and people of their race, must be powerful and salutary. And there is no social or governmental purpose for which money could be more wisely spent than in the systematic training of colored teachers for colored schools.

III.—THE HAMPTON COLORED INSTITUTE, 1881.

By H. P. WARREN, *Principal.*

General Armstrong, with his usual large hearted zeal, responded favorably to the application for the use of his fine accommodations for a colored normal institute and undertook to make all needed arrangements. Wishing to make the proposed school altogether agreeable to him and his colleagues, the selection of the instructors and the mode and cost of lodging the teachers were left to him. One thousand dollars of Peabody money were placed under his control for the purposes of the school, a small balance of which was returned after all bills had been paid.

The session commenced Monday, June 28, and closed Friday, July 15. The aggregate attendance was 141.

There was no absence without sufficient excuse.

I was assisted in my work by Mr. J. Freeman Hall, superintendent of schools at Dedham, Mass., and Misses E. M. Reed and S. M. Cate, associate teachers with me in the New Hampshire State Normal School. We decided to devote all the time of the institute to discussions of the development of reading, number work, geography, language, and to some extent map drawing. We divided the members, alphabetically, into four classes and held daily sessions of five hours. The development of the different subjects was discussed much as in the method class of a normal school. For example, plans were offered for teaching the first steps in number; a discussion followed; if possible, the class was led at once by the teacher to the correct method; if the teacher failed, the subject was remanded and the class held responsible for discussion at the next recitation; and so step by step the development was followed as far as the time of the institute allowed. The lady teachers were able to discuss the development of number and reading through the first four years in school. Mr. Hall discussed the development of fractions and geography. I taught them to make a topical and critical study of a few simple but classic selections, like the Deserted Village. We attempted percentage and the outlines of American history, but the heat was so intense and the teachers so tired (many of them having just closed ten months of school work) that we were forced to discontinue the teaching of these subjects. We feel confident, in reviewing our work, that the plan was a good one; in fact, we can hardly see how any other plan can be of much use at an institute. We felt that our institute succeeded if we fixed in the minds of one-half the teachers this truth: that every subject has one and but one logical development and that no one can properly teach a subject until that development is clear in his or her mind; and that any step omitted in this plan will cause common minds to stumble and will, in many cases, stop all further progress. How far we succeeded it is impossible for us to say. If institutes be conducted on this plan for a decade, we may look confidently for large results. The objects aimed at in my topical and critical teaching of a few classic English selections were these: to show the pupils that every piece of good English consists of leading and subordinate thoughts, and that the force of these subordinate thoughts depends on a clear seeing of the precise picture contained in the words.

No provision was made for lectures and none were given; I think that this was a mistake on my part. When I planned the work of the institute, I supposed that the teachers would be fresh enough to do a great deal of hard work in evening sessions; but I found them so tired that I think a half dozen lectures or entertainments would have afforded a needed recreation.

With few exceptions a real interest was taken by the members of the institute in the work; in many cases this interest was too passive. There seemed to be a dislike, an unwillingness, oftentimes a sheer inability to think out or to think upon the questions raised by the teachers. Very few, seemingly, had received a thorough mental training; so, of course, they made comparatively little of the minute and often intricate development of the different subjects. Still, many surprised us by their grasp of the subjects discussed and showed a constructive power equal to any teachers we had taught. May not the unwillingness of many of the members to do hard work be owing to the fact that the educated few among the colored people hold their position of superiority among their own race too easily? There was no lack of intelligence. I have rarely met a large body of teachers who impressed me as possessing so much power of character or brain; but their power has not come through the schools to any large extent. The graduates of the Hampton School, northern colleges, and the training schools of Alexandria and Richmond enjoyed, with few exceptions, an easy superiority. We were greatly pleased with the dignified, self respectful bearing of the members of the institute; their conduct was literally without reproach. We found them loyal to their State, proud of its history, and heartily interested in its advancement; they spoke warmly of the interest taken in the colored schools by the whites, and especially by the local school superintendents.

The officers of the Hampton Agricultural and Normal Institute were untiring in their exertions to make the session profitable and pleasant to teachers and scholars.

IV.—THE ABINGDON NORMAL INSTITUTE, 1881.

By Hon. M. A. NEWELL, *Principal.*

The Normal Institute at Abingdon, under my direction, opened on the 27th of July and closed on the 23d of August; the session thus contained just twenty working days. There were present on the first day 231 teachers, and it was expected that at least fifty more would present themselves in the course of a few days. In point of fact the enrolment reached 287 (177 men and 110 women), with an average attendance of 265, and represented twenty-five counties. About one-half of the whole number came from Washington County and the counties adjacent to the place of meeting. For the instruction and training of these teachers there were, in addition to the principal, three instructors, Miss Anne H. Ruffner, Mr. J. G. Swartz, of Lexington, Va., and J. P. Thomas, of Richmond, Va. The problem presented to this small "faculty" was how to do the greatest amount of good to 265 teachers in the short space of twenty working days. It had to be determined at the outset whether an attempt should be made to cover in a general and sketchy way a large surface or, on the contrary, to concentrate our efforts on a few definite points. After due consideration the latter seemed to be preferable, and experience confirmed the wisdom of the choice.

The daily sessions of the institute were held in Martha Washington College. Nearly all the ladies boarded and had comfortable rooms in the college; the gentlemen had quarters in private families and the hotels in town; the average price of boarding was $3 a week.

The college rooms available for lectures and recitations consisted of the chapel, which seated 300 persons, and five recitation rooms, none of them large enough for the large classes into which the institute was necessarily divided, but which we were compelled to use for want of better. In the immediate vicinity of the college there was also a public hall with seats for 500 persons, which was used for evening lectures and occasionally in the day time. In this hall the first session of the institute was held. The exercises were opened with prayer by the Rev. Dr. Wylie, president of Martha Washington College. Dr. Ruffner followed with an address on normal instruction.

At the close of his address Dr. Ruffner introduced the principal to the institute as the gentleman whom they were to "love, honor, and obey" for the next four weeks, an injunction which was not disregarded by the members and was cordially reciprocated by the principal.

The remainder of the first day was devoted to the enrolment of members and the arrangement of classes. Knowing nothing of the attainments or abilities of the teachers, it was manifestly impossible to grade them, however desirable such a classification might have been for certain purposes. The institute was therefore divided into five sections, nearly equal in numbers, in the following way: The names of the ladies were written on cards, which were thrown into a hat and drawn. The name first drawn was assigned to the first seat, and so on in succession. The ladies occupied the benches on the right of the central aisle. When the seats were filled, the first fifty names were taken to form Section A; the remainder formed Section B. The gentlemen were disposed of in like manner; they were seated on the left side of the house and were divided into three sections, C, D, and E.

I have gone into this minute detail of the manner of seating and classifying the students for the purpose of stating a curious fact. Though the seats were arranged by lot, yet before the end of the month there was a marked difference between the students seated near the platform and those at a distance. The former were more punctual in their attendance and made better progress.

There being five sections and only four instructors, it became necessary to join two sections together in certain exercises, as will be seen from the following scheme, in which the figures indicate periods of about forty-five minutes each:

Instructors.	First.	Second.	Third.	Fourth.	Fifth.
Mr. Newell	A & B	C	D & E		
Miss Ruffner	C	A	B	E	D
Mr. Swartz	D	B & E	C	A	
Mr. Thomas	E	D	A	B	C

By this arrangement each section went to each of the instructors in rotation, and every member of the institute had precisely the same advantages and opportunities as every other member. It was feared that the repetition of the same lesson to five different classes in succession would be wearisome to the teacher; had it been so, the results would have been worth the sacrifice; but practically there was not sufficient monotony to cause serious inconvenience. A new audience gives life even to an old sermon.

The work of the institute may be conveniently reviewed under the following heads: general exercises, class exercises, optional exercises, lectures.

General exercises.—Two objects were kept steadily in view: first to give instruction, but secondly and principally to give it in such a form as might serve for a model to the teachers when they returned to their country schools. The art of teaching is best learned from examples. The distinction often made and insisted on between academic and professional instruction is of but little importance at the beginning of a normal course. A good spelling lesson is as effectual for "professional instruction" as an hour's lecture on the best methods of teaching spelling. Acting on this principle, example was, as far as possible, used instead of or along with precept, and all the exercises were regarded as working models to be imitated in a different sphere, with such changes as changed circumstances would naturally suggest.

School was opened every morning with singing, reading of scripture, and prayer, which occupied not more than ten minutes. After the opening exercises, a brief quotation from some English author was read, repeated in concert, and written down in the note books, to be committed to memory. Next morning this quotation was recited in concert and by individuals who were called on at random, and questions were asked respecting the author, his date, his works, &c.; then a new quotation was given, to be disposed of in a similar way. At the end of the week all the quotations of the week were reviewed, and at the end of the month all the quotations of the month were given, and voluntary contributions called for. The following are among the passages used in the concert exercises:

Truth crushed to earth shall rise again:
The eternal years of God are hers;
But Error, wounded, writhes with pain,
And dies among his worshippers.—*Bryant.*

Though the mills of God grind slowly, yet they grind exceeding small;
Though with patience He stands waiting, with exactness grinds He all.—*From the German.*

Small service is true service while it lasts:
Of humblest Friends, bright creature! scorn not one:
The Daisy, by the shadow that it casts,
Protects the lingering Dewdrop from the Sun.—*Wordsworth.*

God doth not need
Either man's work or His own gifts; who best
Bear His mild yoke, they serve Him best. His state
Is kingly; thousands at His bidding speed,
And post o'er land and ocean without rest;
They also serve who only stand and wait.—*Milton.*

Well to suffer is divine;
Pass the watchword down the line,
Pass the countersign: "Endure!"
Not to him who rashly dares,
But to him who nobly bears,
Is the victor's garland sure.—*Whittier.*

Tender-handed stroke a nettle
And it stings you for your pains;
Grasp it like a man of mettle
And it soft as silk remains.—*Aaron Hill.*

True worth is in being, not seeming;
In doing, each day that goes by,
Some little good; not in dreaming
Of great things to do by and by;
For whatever men say in their blindness,
In spite of the fancies of youth,
There is nothing so kingly as kindness.
And nothing so royal as truth.—*Alice Cary.*

Since trifles make the sum of human things,
And half our misery from our foibles springs,
Since life's best joys consist in peace and ease,
And though but few may serve yet all can please,
Oh! let the ungentle spirit learn from hence
A small unkindness is a great offence.—*Hannah More.*

Be good, sweet maid, and let who will be clever;
Do noble things, not dream them, all day long;
And so make Life, Death, and that vast For Ever
One grand sweet song.—*Kingsley.*

Knowledge is now no more a fountain sealed;
Drink deep, until the habits of the slave,
The sins of emptiness, gossip, and spite,
And slander die. Better not be at all
Than not be noble.—*Tennyson.*

Earth's crammed with Heaven,
And every common bush afire with God;
But only he who sees takes off his shoes;
The rest sit round it and pluck blackberries.—*Mrs. Browning.*

Thanks to the human heart by which we live,
Thanks to its tenderness, its joys and fears,
To me the meanest flower that blows can give
Thoughts that do often lie too deep for tears.—*Wordsworth.*

All nature is but art, unknown to thee;
All chance, direction, which thou canst not see;
All discord, harmony not understood;
All partial evil, universal good;
And spite of pride, in erring reason's spite,
One truth is clear: Whatever is, is right.—*Pope.*

Greatness and goodness are not means, but ends:
Hath he not always treasures, always friends,
The good, great man?—three treasures, Love and Light.
And calm thoughts regular as infants' breath;
And three firm friends, more sure than day and night,
Himself, his Maker, and the angel Death.—*Coleridge.*

Have hope! Though clouds environ round
And gladness hides her face in scorn,
Put thou the shadow from thy brow,—
No night but hath its morn.—*Schiller.*

History was also taught as a general exercise in the morning. Bem's method of dates (introduced into this country many years ago by Miss Elizabeth P. Peabody) was used in this connection with good effect. A blackboard divided by vertical and horizontal lines into one hundred squares represented a century; on these squares (each representing a year) certain marks were made with colored crayons, which represented to the eye the class of events and the country or countries principally concerned. With these helps it was found easy to memorize a brief statement of facts with the date. The instructor then gave some interesting details in connection with the statements and dates memorized. Among the topics thus discussed were "Manners and customs in England at the accession of Elizabeth;" the "Diet of Worms;" the "Iconoclasts;" the "Beggars;" the "Siege of Leyden;" the "Battle of Lepanto;" the "Spanish Armada;" "Machiavelli;" "Copernicus."

The general exercises of the morning were usually closed with a brief and rather informal lecture on some point of school management or the methods of teaching some particular branch or of conducting some school exercise.

One of the topics which excited great interest both among the teachers and the county superintendents was the grading of country schools. The subject was new to many of the audience and it was thought best to spend a part of several days in the discussion of it, that it might have a fair chance of being thoroughly understood. I think the time was well spent. The general principle was accepted without difficulty that the school studies should be arranged in certain fixed groups and pursued in fixed order, certain studies being assigned to the first year (or term), certain others to the second, and so on to the completion of the course. The schedule published by the State superintendent was explained in this connection and recommended for general adoption. The general principle was accepted in theory, but it was not found so easy to admit the rule of action founded upon it—that which alone will enable the teacher to carry the theory into successful practice—namely, that no pupil shall be promoted from his grade to a higher one till he has accomplished *all* the studies of the lower grade. The objection was made that this rule would prevent a pupil from being advanced in studies for which he has a special talent because he failed to make progress in studies for which he has no talent. The objection is very plausible and demands careful consideration. The answer is that the studies of the common school are universal studies, for which no special talent is needed; that the education of the common school is not intended to encourage specialties, but to develop mental power on all sides; that specialties had better be developed after the school course is completed; that, after all, it is most frequently a case not of ability, but of fancy or of taste, which is so often mistaken for talent; but that, if a pupil does show a weakness in any direction, it is "the things that are weak" that need to be strengthened; that, if a pupil finds progress in arithmetic very easy and in grammar very difficult, the rational cure is not more arithmetic and less grammar, but more grammar and less arithmetic, until the equilibrium is restored. The rule, then, must be enforced; but the word "accomplished" needs some explanation, which can be best given by an illustration. Suppose fifty pages of the spelling are part of the group of studies belonging to grade C. Some pupils are found at the examination for promotion to be "perfect" in these fifty pages; one can spell 90 per cent. of the words, another 80 per cent., another 70 per cent., another 60 per cent., another 50 per cent. Which of these shall be held to have "accomplished" this part of the work? It is quite possible that the pupil who made 50 per cent. would not be able to make 100 per cent. in seven years. It is equally possible that he might have made 70 per cent. if he had used reasonable diligence during the term. He should, therefore, be kept in his grade, not till he is "perfect," but till he has done all that could reasonably be expected from him. With this explanation the county superintendents seemed to be satisfied that the rule of promotion is a good one. It is, indeed, the key to the system.

The next serious objection to "grading" was that the attendance in many country schools is so irregular that the grades, if formed, could not be kept up. Irregular attendance must make irregular progress. The answer was that the objection applies equally to every kind of classification. No system can give to the absent the advantages of those who were present. If such a system could be devised, it would merely put a premium on irregular attendance. It is quite true that under the graded system the loss caused by absence is rendered more conspicuous and more palpable, and can be more accurately estimated; and the system, therefore, tends to promote regularity. When parents and pupils are made to feel that absence entails a certain and definite loss which cannot be compensated, there will be fewer absentees.

The principal objections having been disposed of, attention was directed to the positive advantages of the graded system:

(1) It tends to promote thoroughness of work. (2) It encourages a symmetrical development of the faculties and discourages hobbies. (3) It gives parents a trustworthy test of the progress of their children. Without this parents judge by the books which the children carry home; and teachers often yield to the temptation to put the "sign" in the place of the "thing signified." (4) It supplies the pupils with an adequate motive to diligence: legitimate, well earned promotion. (5) It gives every pupil a definite standing; a position, by right, in the organism of the school. (6) It thus tends to prevent, or at least to lessen, the injury that is caused by a change of teachers. The new teacher takes charge of a machine that is in running order. He does not need to take it apart, oil the pieces, and put it together again; he simply goes on with the work from the point where his predecessor left it. (7) It is a great incentive to regular attendance. (8) It gives definiteness and precision to the teacher's work and enables him to show it to better advantage. (9) It greatly assists the county superintendent in his examination of the schools; for he can ascertain with precision what the pupils ought to know before proceeding to find out what they *do* know.

Class recitations.—At the conclusion of the morning exercises the sections separated for class recitations according to the scheme given on a preceding page.

The department of geography was assigned to Miss Ruffner; and here, as in all the other departments, the object was to undertake but a little and to do that little well. The little that was undertaken was map drawing and the use of outline maps. The map drawing was limited to the maps of North and South America, but this was sufficient to give the key to the whole subject. The exercise was new to the most of the teachers, and they worked slowly and awkwardly for a few days, but before the tenth lesson was reached they had warmed up to their work and the enthusiasm increased day by day till the close. The maps made by the teachers after the fifteenth lesson were nearly all creditable and many of them were very beautiful. The system used was Apgar's, one of the simplest and easiest in use; but it is doubtful whether the "system" would have succeeded so well had it not been handled by a teacher of infinite tact and patience and untiring industry.

Mr. Swartz made a brief review of arithmetic and the methods of teaching it, from notation to square root, giving special attention to the principles on which the various processes are founded and emphasizing the substantial uniformity that characterizes similar operations in whole numbers, decimal fractions, vulgar fractions, and denominate numbers. Much time was devoted to the illustration of the practical methods of handling large classes in primary arithmetic and in explaining labor-saving appliances, such as Pendleton's and Walton's.

Phonetics, grammatical analysis, and object lessons were assigned to Mr. Thomas. The first two received brief but sufficiently comprehensive treatment. There was scarcely time to do justice to the subject of object lessons, but even the little that was done will bear good fruit. The principal topics selected were color, form, lines, and angles, and parts, uses, and qualities of objects. It was explained that the purpose of a course of object lessons is not to communicate knowledge about common things, but to assist children to acquire knowledge for themselves by means of accurate and systematic observation, to extend their knowledge by means of correct reasoning, and to express the results of observation and reasoning in correct and precise language. The powers of perception, comparison, judgment, reasoning, and expression are thus cultivated and developed in a well devised course of object lessons. To the teacher the habit of giving these lessons is of the greatest importance, as it reacts on his methods of teaching in other branches and has often been the means of opening a new and a better way to those who had grown old in the ruts.

The class exercises of the principal, with the exception of a few lessons on word-building and the history of words and on verbal parsing, were confined to reading. The process of learning to read aloud consists of three parts: the child has first to learn the names of words; secondly, to collect the words in proper groups; and, lastly, to read with expression. The three methods of learning the names of words were considered and compared: the alphabetic, the phonetic, and the word method. The alphabetic method was regarded as the worst, inasmuch as the name of a word is rarely suggested by the names of the letters; there is no natural connection, for example, between the words "are" (r), "you" (u), "be" (b), and the sound, *rub;* and the artificial connection which we form is only a hindrance in learning to read. The phonetic method is philosophical and in the hands of trained teachers has been found very successful; but untrained teachers will find the word method simpler in theory and quite as effective in practice. The theory is that words of one syllable are simply objects whose names must be learned as names of other objects are learned. A child is not required to find out the names of other objects; he is simply told the names and he remembers them. Words of more than one syllable are pronounced by naming the elementary words in succession, as, ware-house-man. Two things must be noted here: First, that after a child has learned the names of a certain number of words he can find out for himself the names of some others by a kind of phonic analysis, which is not the less effective because the child is unconscious of it; secondly, the term "word" must be extended so as to embrace syllables which are not words. The word "embrace," for example, is learned not as a whole, but by joining the syllable *em* to the word *brace.*

The proper grouping of words seems to follow naturally from an exact knowledge and quick recognition of the names of words and their meaning. Improper grouping is caused by uncertainty about the names of words, the child pausing wherever he can in order to gain time to make up his mind about the unknown word. It may and often does proceed also from not perceiving the meaning of the phrase or sentence which he is reading. To read with expression requires that the reader should fully comprehend and feel what he is reading and that he should not disguise or conceal his perceptions and feelings. Young children always speak with expression before they have learned either to simulate or dissimulate. The practice of teaching reading as an art of simulation, putting on the outward expression of feelings which have no actual existence, is to be avoided and condemned. The rules for inflections, emphasis, tones, &c., are of doubtful utility. Even if these rules are correct they are derived merely from observation of nature, and we had better go directly to nature for guidance. Unfortunately, teachers have to deal not with those who are merely ignorant, but with those who have been badly taught. It is very hard to eradicate bad habits of reading. They often become, like gait and gesture, part of the personality of the individual, of which he cannot divest himself. Concert reading is worth trying in such cases. The reader then loses his sense of individuality; he becomes one of the pipes of a great organ and naturally obeys the laws of rhythm and harmony. He loses the sense of false shame which impedes the efforts of many beginners. The teacher, too, can point out errors without offence and require repeated efforts at correction, which would be impossible or imprudent with individuals in presence of a large class. But concert reading, like all other powerful agents, is dangerous when used by unskilful teachers. It is apt to beget a hard, set, measured, mechanical fashion of reading, and even when employed by the most skilful teachers must be largely supplemented by individual reading; and, as in large schools the style of reading is much influenced by unconscious imitation, the best readers should be most frequently called on.

Teachers should bear in mind, however, that in our common schools reading aloud is not the only nor the principal end in view. It is only a means to the all important end of learning to read; that is, to acquire knowledge from a printed book. We teach reading, not that the pupils may become public speakers, actors, or elocutionists, but that they may have the ability and the desire to read for information and improvement. This, the real end, is often forgotten, and the means (reading aloud) usurps its place. But teachers should not be satisfied with less than this, that every graduate of our common schools should carry away with him a confirmed habit of reading good books. With this high ideal before them, they are not likely to go far astray in the choice of means.

In this connection it was observed that in spelling also the means is often put for the end. The end is that the learner should be able to write words with the proper letters; spelling aloud is only a means to this end, and a very inefficient means. Oral spelling could be dropped entirely through the whole course, not only without injury, but with positive advantage; and this would obviate many of the objections which the advocates of a radical reform in spelling urge against our present orthography.

A similar remark may be made about grammar. English grammar was supposed to be "the art of speaking and writing the English language with propriety," whereas it is only one of the means, and perhaps the least efficient of all the means to that end. Consequently, "grammar" was much taught and "the speaking and writing the English language with propriety" much neglected, thus again putting means for end.

Optional exercises.—The optional exercises took place out of school hours: singing, calisthenics, experience meetings, and literary and musical soirees. Very little was done by way of teaching vocal music; but many of the members met voluntarily in the afternoons for practice under the direction of Mr. Swartz. Mr. Swartz also led the calisthenic exercises, and with great success. Every available place on the floor was occupied every afternoon by an earnest and hopeful class; and enough was learned before the close of the month to enable the teachers to introduce the exercises into their own schools. What we called "experience meetings" were gatherings of teachers in the evenings in the chapel for the purpose of discussing interesting topics in connection with school management and discipline. They were largely attended, both by the members of the institute and the citizens of the town and formed a very valuable part of our educational agencies.

The evening entertainments, consisting of music (vocal and instrumental), essays, and declamations, were deservedly popular, and were useful also, as they formed models for similar exercises in common or graded schools.

Lectures.—There were seven evening lectures, all very largely attended, both by members of the institute and the citizens of the town and neighborhood: three by Dr. Ruffner, on "The geology and commercial mineralogy of Southwestern Virginia;" one by Professor Bogart, of Savannah, on "Yorktown and its reminiscences;" one by Prof. E. E. Hoss, of Emory and Henry College, on "The successful teacher;" and one by the principal, on "The new education."

The last lecture of the series, "The new education," was to a great extent a summary of the principal points of the morning talks on the first principles of education. The word "new" must be taken in a limited sense. The laws of the human mind, on which all education must be founded, are not late discoveries. But there may be and there have been new applications of these laws. The force of steam was as well known to the ancients as it is to us; but it was reserved to this century to discover the means of applying this force to useful purposes.

"The new education" recognizes the truth that the improvement of the race can come only from the improvement of all the individuals of the race, and that the improvement of the individual requires the due development of all the powers and capacities. Hence the necessity of common schools to which all shall have access, and not merely a favored few. Hence, also, the necessity of a common school curriculum, which shall be broad rather than high.

The powers which are to be developed in the common school are fourfold: physical, moral, intellectual, and æsthetic; the ends to which these powers are directed are health, virtue, truth, and beauty. Different nations at different times have given almost exclusive attention to one or another of these classes; it is for the "new education" to assist in the harmonious development of them all. But it can only assist; it cannot control; the family, the church, the state, and the social organization must do their share of the work.

"The new education" holds that the development of the individual is a process of growth in *all* of the departments named; of growth from within, not accretion from without. This is at once admitted with respect to physical development, but it is equally true with regard to the others. It is as impossible to form a vigorous mind by cramming the memory as it would be to form a healthy body by cramming the stomach.

The new education investigates the conditions and obeys the laws of growth. For physical development the most essential conditions are a good natural constitution, food (including air), and exercise. So, for moral, intellectual, and æsthetic education, there must be given natural mental ability, proper food, and exercise. Virtue, truth, and beauty must be presented to the mind, and the mind must be exercised thereon before there can be any development of the corresponding faculties. Hence the difficulty of teaching morals in school. There are comparatively few occasions when questions of practical morality present themselves in the daily routine of the school room. But the teacher must make the best of the opportunities that do occur, for the moral faculty cannot grow without exercise. One of the most important laws of mental development is that up to a certain point (for growth of mind like growth of body has certain natural limits) it is in proportion to the amount of judicious exercise.

The new education teaches that the desire of knowledge is as natural to the mind as the desire of food is to the body; and that consequently it is as unreasonable to whip a child to make him learn as it would be to whip him to make him eat. A healthy child may be trusted, if he is furnished with suitable food, to eat just as much of it as will be good for him; but all children cannot digest and assimilate the

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same amount. So a healthy mind, furnished with suitable mental food, will appropriate as much as can be well used; but different minds will take in very different quantities. The new education also teaches that the right use of the faculties either of body or mind gives pleasure. If, therefore, pleasure is not the result of mental exercise, there is something wrong; the mind itself may be diseased, or the exercise may be of a wrong kind, or devoted to a wrong object, or continued for too long a time.

Education being a growth from a living principle within, not an addition of dead matter from without, it follows that the principal work of the teacher consists in supplying the proper conditions of growth and removing obstructions. The best teaching is that which gives the pupil the best chance to learn. In the partnership between teacher and scholar, the latter should be the active, the former the silent partner. A caterer may purchase good food and have it well cooked and properly served, but he can neither give appetite nor power to digest it. He may supply an artificial stimulus, but it is at the expense of the constitution in the long run.

The new education makes a distinction between productive and unproductive knowledge. All knowledge may be regarded as important, but the most important is that which produces or may be used in the production of other knowledge. It may be useful to know the latitude of St. Petersburg, but this knowledge is not of the productive sort, like the knowledge of the multiplication table. The labor of children in the common schools should be directed mainly to the acquisition of productive knowledge. The acquisition of useless or comparatively useless knowledge is often defended on the ground that it strengthens the mental faculties; but this plea can be admitted only when the same result cannot be attained by the prosecution of studies that are useful.

The education of a child should be largely directed to the formation of habits. It is a mistake to stop with mere ability. Many are able to write (for example) who do not use the power, because they have not formed the habit. Many can read, but have not acquired the habit of reading. A child learns to walk or to speak, very slowly at first, with great difficulty, and with conscious effort. By degrees he becomes able to walk or speak more rapidly and with less effort; and finally the habit is formed and these operations are performed without conscious effort. In like manner the practice of reading, spelling, writing, and the fundamental operations in arithmetic should be continued until all sense of effort is lost. Less than this may be called instruction, but it is not education. By constant practice, also, punctuality, courtesy, veracity, and honesty may become fixed habits even at school, and thus the foundation of character may be laid.

The new education regards teaching as an art—as one of the fine arts—and the teacher as an artist. Like other artists, therefore, he must study the principles of his art; he must have technical training; he must have opportunities for seeing the work of the best masters in order to form his taste, and facilities for practising his art under judicious criticism. It is thus that musicians and painters are made. No doubt natural genius has much to do with ultimate success, but no genius in this generation has ever blossomed into an artist without study, training, and practice. Hence normal schools are an essential part of an efficient public school system.

My experience in conducting a normal institute for six weeks at the University of Virginia in the summer of 1880, and for four weeks at Abingdon this summer (1881), suggests some observations that may be profitable to others who may be engaged in similar work:

(1) In the selection of a place two things should be looked to: first, to secure a place where, in addition to the assembly room, there are comfortable class rooms large enough for sections of fifty students; secondly, to select, if possible, a place where the citizens will take an interest in the educational work of the institute.

(2) The instructors needed are one for every forty-five or fifty students, and a prin-

cipal in addition. The instructors should all be thoroughly trained normal teachers and each should have a specialty.

(3) It is very desirable that every student should be present at the opening and remain till the close of the session. To secure this, no applicant for admission should be accepted till after he has deposited with the treasurer the price of boarding for the term, with the understanding that the money will be returned only in case sickness or some other sufficient cause should prevent his attendance. The roll of applicants might be opened three months before the beginning of the institute and closed as soon as the proper number of persons were accepted. In this way it would be known definitely how many were to be provided for.

(4) The same instruction should be given to every member and by the same instructor, the principal having power, however, to excuse any one from particular exercises for sufficient reasons.

(5) There should be no side shows. It should be understood from the outset that institute work would occupy the whole time and attention; private classes would only be a hindrance to public work. Itinerant lecturers, elocutionists, &c., should be specially discouraged.

(6) The formal lectures of the institute should be limited in number, say not more than six in the week.

(7) In addition to common school studies, there might be arrangements made to give a course of ten or twenty lessons on each of the following subjects: Natural philosophy (with experiments), chemistry (with experiments), botany, geology, and mineralogy. Only one subject, however, should be taken up in the year if twenty lessons were given; two, if ten lessons were given. The subjects should vary from year to year.

(8) It is exceedingly desirable that there should be a class of children to illustrate certain teaching exercises. It may be difficult, in some cases impossible, to obtain this aid, but it would be worth while to make the attempt.

(9) The normal institute should be regarded, at least until normal schools have been fully established, as a permanent institution. The work of each year should be considered as a continuation of the work of the preceding and a preparation for the work of the following year. Apparatus of various kinds, maps, globes, charts, mineralogical specimens, philosophical instruments, &c., should be collected and preserved for use from year to year, a sort of portable educational museum.

V.—THE FRONT ROYAL NORMAL INSTITUTE, 1881.

By Dr. EDWARD BROOKS, *Principal.*

The normal school at Front Royal opened on the 2d of August and closed on the 26th. Fifty-three counties were represented and ten county and several city superintendents were present during the whole or a portion of the time.

The faculty consisted of Dr. Edward Brooks, principal; Prof. E. O. Lyte, teacher of grammar and vocal music; Prof. George W. Hull, teacher of mathematics; Prof. J. W. Lansinger, teacher of geography, history, and object lessons; and Miss M. Frances Boice, teacher of reading and calisthenics. The principal at first attempted to take charge of the classes in mathematics, in addition to his other duties, but finding he was overtasking his strength he engaged Mr. Hull for this department.

The school was organized by arranging for general exercises and class drills. The pupils assembled daily at 8.15 A. M. for opening exercises, consisting of singing a hymn, reading a chapter in the Bible, and prayer. After these exercises there was a lecture for three-quarters of an hour by the principal on some subject connected with the science and art of teaching. The school was then divided into four sections, subsequently into three, and sent out to different recitation rooms for drill on methods of teaching the various common school branches. At 12.15 the members re-

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assembled in the lecture room and had a drill in vocal music, after which the general business of the school was transacted.

Besides this the school organized a reading club, meeting at 4.30 P. M., which was largely attended, the exercises being of great interest and profit to the teachers. There were also frequent night sessions, the exercises of which consisted of addresses, reading, and music. During the third week Dr. Ruffner was present and delivered three interesting lectures to crowded houses of teachers and citizens. His eloquent words in favor of common schools and the need of high intellectual and moral qualification on the part of teachers made a deep impression and will be long remembered. We were also favored with addresses by Professor McGilvray, Judge Lovell, and Superintendents Carne, Little, &c. Superintendents Peay, Jones, Gresham, Thornton, and Professor Fox also took an active part in the general business of the school.

All of these exercises were largely attended by the leading citizens of the town, who manifested a deep interest in our work. Ministers, lawyers, judges, and the most cultivated ladies and gentlemen of the village attended the morning lectures and frequently visited the classes to hear the class drills in grammar, arithmetic, &c. The reading classes were especially attractive and popular.

The course of instruction can be indicated by giving a brief outline of the topics discussed. The principal subjects of the lectures of the principal, Dr. Brooks, are as follows: (1) The general nature of education; (2) the general principles of education; (3) the nature of the mind; (4) nature and use of perception, memory, and imagination; (5) nature and use of the understanding, including abstraction, conception, judgment, and reasoning; (6) nature and use of the instructive power; (7) methods of culture, including physical, intellectual, and spiritual culture; (8) synthetic and analytic methods of teaching; (9) instructive and deductive methods of teaching; (10) concrete and abstract methods of teaching; (11) teaching a child to read; (12) teaching correct pronunciation; (13) logical outline of arithmetic; (14) philosophy of arithmetical language; (15) teaching elementary geometry.

Grammar (*Professor Lyte*).—The following subjects were discussed in detail before each section with the twofold object of imparting knowledge and presenting improved methods of teaching: (1) Classification of nouns; (2) classification of pronouns; (3) construction of nouns and pronouns; (4) classification of verbs; (5) construction of infinitives and participles; (6) subordinate conjunctives; (7) written parsing; (8) written analysis; (9) first lessons in language; (10) first lessons in grammar.

A query box was put up in the class room and freely used by the institute. The box was emptied weekly and all queries of practical interest to the class were answered.

Various questions relating to the subject of grammar, the best methods of teaching it, &c., arose from time to time and were freely discussed.

Vocal music.—A brief outline of a course in vocal music for common schools was given to the institute.

The institute had a daily drill in songs and hymns adapted to school use.

Geography (*Professor Lansinger*).—I. General discussion of the subject. II. Primary geography: (1) The principles of teaching primary geography; (2) the synthetic, analytic, inductive, and deductive methods of teaching primary geography; (3) teaching the divisions of land and water; (4) map drawing by imitation; (5) a lesson to illustrate the synthetic method; (6) presentation of outlines; (7) personal history in connection with primary geography; (8) a lesson on the globe. III. Advanced geography: (1) Methods of conducting the recitation; (2) mathematical geography; (3) currents, winds, &c.; (4) map drawing according to a system.

History.—I. Primary history: (1) Methods of teaching and principles; (2) settlements, administrations, &c. II. Advanced history: (1) Methods of conducting the recitation; (2) campaigns.

Object lessons.—(1) Importance and principles; (2) objects and their parts; (3) lessons on color.

Written arithmetic (*Prof. George W. Hull*).—(1) Fundamental operations; (2) greatest common divisor; (3) least common multiple; (4) common fractions; (5) decimal fractions; (6) percentage and interest; (7) stocks and dividends; (8) true and bank discount; (9) rates and proportion; (10) involution and evolution; (11) the classes also received daily drills in mental arithmetic. Each member was presented with a copy of the Normal Mental Arithmetic, and daily lessons were assigned, studied, and recited, as at a regular school. There was a deep interest in this subject and more than two-thirds of the book was completed.

Reading and elocution (*Miss M. Frances Boice*).—(1) Free gymnastics to develop chest and waist; (2) course in breathing; (3) drill on the proper use of the throat; (4) drills in vocal culture; (5) exercises in emphasis; (6) exercises in slides; (7) exercises in logical analysis.

In concluding this report, I desire to express my appreciation of the deep interest manifested by the members of the institute in all the exercises. Their devotion and enthusiasm contributed largely to the success of the school and made our labors comparatively easy and unusually pleasant. The city and county superintendents have also my sincere thanks for their cordial coöperation, and especially Superintendent Roy, for his efficient services so freely and constantly rendered. To the good people of Front Royal, who opened their homes and their hearts to us and whose many acts of kindness will be long remembered, our thanks are also due and are hereby tendered.

VI.—THE NORMAL INSTITUTE FOR WHITE TEACHERS AT SALEM, 1882.

By Prof. W. B. McGilvray, *Principal.*

A normal institute, conducted by Prof. E. V. De Graffe, of Paterson, N. J., and W. B. McGilvray, of Richmond, Va., was held at Salem, Roanoke County, commencing August 7, 1882, and continuing ten days.

Professor De Graffe took as the subjects of his lectures spelling, phonics, reading, language, object lessons, and penmanship.

Professor McGilvray had arithmetic, grammatical analysis, geography, map drawing, school government, and discipline.

Besides regular lectures on each of the above subjects, with practical instruction and illustrations of the best methods of teaching them, each of these gentlemen delivered two public addresses in the town hall to large and interested audiences.

The authorities of Roanoke College very generously gave their well arranged buildings and beautiful grounds for the use of the institute, and opened their halls and library to the members during the session. The teachers were placed under many obligations by the president, faculty, and trustees, for their cordial reception and numerous acts of courtesy, and the citizens generally gave them a warm welcome, elegant hospitality, and delightful social intercourse.

The regular attendance and the enthusiastic spirit of the teachers were worthy of all praise. They took hold of the work with an eagerness that showed their desire to avail themselves of every advantage afforded by the institute.

The institute was formally opened in the town hall, Monday evening, with an address by Superintendent W. W. Ballard, of Salem. President Dreher, on behalf of the faculty and trustees of Roanoke College, followed in an address of welcome to the teachers and school officers; and the Rev. E. C. Gordon, on the part of the citizens, extended the hospitalities of the town to the teachers, in whose behalf Professor McGilvray briefly responded.

The following morning at 9 A. M., Professors De Graffe and McGilvray entered upon the regular work of the institute. The subjects were programmed and arranged for each day, and every session was promptly and regularly attended by the teachers and school officers, of whom 83 were present. A large number of citizens gave evidence of their interest by constant presence at the lectures.

The exercises were opened daily with devotional services, and cheering, enthusiastic singing frequently enlivened the exercises during the day. Besides the regular subjects, professional training, moral training, methods of teaching, and other minor topics of school work were the subjects of carefully prepared lectures of an eminently practical character, and great good may reasonably be expected as the result of these normal institutes.

The lectures upon the various subjects may be briefly outlined, topically, as follows:

Spelling.—Addressed to the eye; written method, therefore, to be relied upon mainly. How to conduct the lesson. Blackboard work in illustration.

Penmanship.—Position of body, pen, and book. Principles or elements to be taught. How to secure good results. Model lesson on blackboard.

Phonics.—Why taught. Method of drilling classes. Diacritical marks as key to sounds. Result, distinct utterance, correct pronunciation.

Reading.—Errors of A B C method. Word method explained and illustrated. Practical, because natural and sensible. Recommended by results. Instruction of advanced classes. Gaining thought, reproducing thought, transmitting thought by voice, expression.

Arithmetic.—Mental should precede practical. Learning to count. Writing numbers. Objection illustrations. Process, result, drill. Thorough work from the start. Constant use of blackboard. Construction of tables, principles explained, relation to advanced work. Result, accuracy first, rapidity afterwards.

Geography.—Simplest idea in pupil's surroundings at home, along the road, about school. Illustrative map of school room and grounds. Localize as far as possible every item. Map drawing in advanced stage. Outline map drawn on board to be filled up as items are studied. Map the growth of daily class work, including all the points of interest.

Grammar.—Diagram analysis in simplest form. Sentence in its simplest elements. Expanded, to include all modifiers. Method of teaching parts of speech. Diagram for parsing. Blackboard illustrations.

Composition.—A word about which something must be said by pupil; gradual steps; advancing the idea. Subject within grasp of pupil. Expansion of sentence. Topics selected. Outline, filling in. Frequent practice; result, ease of expression.

Recitation.—Object of. How conducted as to lesson. How given. How prepared. How and when taught, &c.

These lectures were all the result of large and varied experience and observation, thoroughly practical, touching almost every point in actual school work. They had been, as it were, dug out by hard blows of real teaching in actual school experience and gave exactly such instruction and in such form, too, as any intelligent, live teacher might take home and work up in his own school with his actual classes. They filled up a real want with such material as is constantly used by the best teachers in the land. No one in attendance, even merely as a looker on, could fail to see that such institute work must be productive of incalculable good to the cause of public education, must give a real uplift to the instruction in every school whose teacher attended the institute and was alive to its advantages.

VII.—THE NORMAL INSTITUTE FOR WHITE TEACHERS AT FARMVILLE, 1882.

By Prof. W. B. McGilvray, *Principal.*

A similar normal institute, beginning August 17, was held at Farmville, Prince Edward County, conducted by Professor De Graffe alone for two days, and by Professor McGilvray for the remainder of the time, he lecturing five hours a day, besides giving *one* public lecture at night.

The normal was opened with public exercises, in which the mayor of the town, in a very enthusiastic address, extended a cordial welcome to the teachers and visitors and opened the hospitalities of the citizens to the enjoyment of all. Professor De Graffe, on the part of the teachers, made an appropriate response.

The authorities of the Baptist church very kindly gave the pleasant basement for the use of the institute and the commodious audience room of the church was opened for the public addresses, which were attended by large crowds of citizens on every occasion. All the sessions of the institute were well attended by both teachers, of whom 101 were present, and citizens also from town and county.

The members of the institute enjoyed many social privileges among the cultured citizens of the town and vicinity and were placed under special obligations by the cordial reception which was everywhere extended.

The exercises were opened and conducted daily in the same way as at Salem. The subjects of the lectures, as well as the lectures themselves, were the same as there, with some exceptions as to topics discussed, and the addition of some others, necessitated by the unavoidable absence of Professor De Graffe. And what has been said above as to the general character of Salem institute may be applied to that at Farmville. The topical outline of the lectures applies to both.

It may be said truthfully that both institutes were entire successes, and the teachers and visitors have new and advanced ideas fully abreast of those introduced and practised in any portion of the country. An awaking of both teachers and people to the importance of public school work may be named as one result which was very apparent, and a stimulus in the right direction was given to all; and one may safely assert that a positive advance, a real progress, has been made by the teachers in attendance. The work done was helpful because practical and in the line of the progressive tendency to mind training in the new methods of instruction. What to teach, how to teach, and why thus taught were ever present to the lecturers, and they are hopeful of good results.

VIII.—THE NORMAL INSTITUTE FOR COLORED TEACHERS AT PETERSBURG, 1882.

By H. P. MONTGOMERY, *Principal.*

The normal institute held at Petersburg during the first two weeks of August, 1882, permitted only a small amount of work, but that, I trust, was faithfully and conscientiously done. The selection of Petersburg was fortunate, because the institute did much to awaken thought on education among the inhabitants.

Aim.—The object of the institute was to prepare the teachers of the State for more efficient and better work in their schools.

Attendance.—To the call of the superintendent 113 resolute, determined teachers responded and seemed eager to seize the means of improving themselves. Too much cannot be said in praise of those who left pleasure and recreation and spent the two weeks at the institute. It showed a high appreciation of their calling and a willingness to sacrifice time and money for self improvement. The unabated interest and sympathy manifested by the teachers encouraged and enabled the instructors to do their work with success and love.

Benefits of the institute.—The advantages of such a gathering are obvious. The teacher makes the school, and a good school is simply a good man or woman exerting an inspiring influence upon the young minds collected there. Hence to develop the teacher is to improve and build up the system of education. He is the pivot upon which all turns. The motto of the State should be "one for many." There is, so to speak, a conservation of energy and a saving of money in thus fitting the teacher for his work, for he controls and trains sixty or seventy pupils. He should be the grand electrical machine to charge these.

The teachers gain much from one another during their attendance, from the daily free interchange of views. This rubbing together rouses, causes all to gird up their loins for nobler and higher effort.

School management and discipline were discussed by the instructors in such a way as to benefit the teachers and to keep them from indulging in experiments which might prove detrimental to their schools.

The principal spent a certain time in answering questions propounded by the teachers. These were of a very practical nature and they were discussed by the principal in the light of his large experience. This feature of the institute was very interesting and valuable. Occasionally a topic bearing on education was given to the teachers for discussion and it was surprising and interesting to listen to the intelligent and original ideas advanced. Here they threw their experience into a common lump and each selected the best for himself.

Instructors.—Prof. W. S. Montgomery, algebra and English grammar; Mrs. E. V. Montgomery, primary reading and language; Miss L. E. Moten, penmanship, drawing, and map drawing; arithmetic and pedagogics were taught by the principal.

Method of conducting the institute.—The teachers were divided into two classes, A and B, so that two subjects were treated during a single hour. The aim was to give the subjects and the methods of teaching them equal attention. Realizing that what we do, rather than what we say, produces lasting impressions upon the minds with which we deal, we endeavored to lodge this truth firmly in the breasts of the teachers. A teacher may not, in two weeks, be able to learn much of the subjects named, but he can learn how to master them for himself and how to correct and improve his methods. We never lost sight of the fact that the prime design was to teach the teachers *what* to teach and *how* to teach it, thus furnishing the key to correct, intelligent, and successful work in the school room.

Arithmetic.—Primary arithmetic, common and decimal fractions, percentage and interest, were thoroughly taught, with the view of giving the teachers the best methods of mastering and presenting these topics to their schools.

Algebra.—The short time allowed only a glance at this subject. Its importance was dwelt upon as an aid to mental discipline and to progress in the higher mathematics.

Grammar.—Here the object was to show how to create and sustain an interest. Methods of analysis were given in which the structure of the language, the real life-blood, could be seen by the learners.

Language.—The best way of introducing language, both oral and written, into primary schools was exemplified in a series of daily lessons by Mrs. E. V. Montgomery. Letter writing and composition received due attention, especial stress being put upon the former.

Primary reading.—Care was taken to show that but one difficulty at a time should be presented to the child in beginning this most important study, the master key to all after progress. The waste of time and nerve in the old methods struck every one when the more excellent and natural way, as set forth in the Appleton Readers and Chart, was seen. In connection with the reading, phonic spelling received proper treatment.

Penmanship.—The Spencerian system was enthusiastically indorsed by all who witnessed Miss L. E. Moten as she unfolded the beauties and principles of the system.

Drawing and map drawing.—In drawing, Bartholomew's system was used; in map drawing, Apgar's. It was shown how easily and successfully these studies could be made a part of the course in every grade of school and what help they furnished to the discipline and progress of the pupils.

Diplomas.—All who continued faithful in attendance received a diploma, signed by the superintendent of public instruction and by the instructors of the institute.

Visitors.—His Excellency Governor Cameron visited the institute. He said that he came to represent the Commonwealth of Virginia and to express his personal sympathy and interest in the great cause of education. To Superintendent F. B. Branch, of the city of Petersburg, I tender sincere thanks for the support given to the institute by his presence and work. To him is largely due the success which was attained. The school board of Petersburg in a body visited the institute and gave words of cheer and encouragement. To the gentlemen who lectured to the teachers many thanks are due.

The papers.—The Index-Appeal and The Lancet were valuable aids to all by the favorable notices of the institute given in their columns.

To the citizens of Petersburg I desire to tender deepest gratitude on behalf of myself and associates for their kindness and sympathy.

Virginia Teachers' Association.—Toward the close the above named association was formed, having for its object a closer union of teachers. If this is fostered great good will result and the esprit de corps will be increased.

C.—PEABODY INSTITUTES IN GEORGIA.

Failing to obtain an appropriation from the legislature, Mr. Orr applied to the general agent of the Peabody fund for the necessary means, who placed $2,000 at his disposal for this purpose and put the whole enterprise under his control and management. With this sum he conducted three institutes, one in South Georgia, at Americus, one in Middle Georgia, at Milledgeville, and one in North Georgia, at Toccoa. These institutes were held simultaneously and were continued during the whole of the month of August. Twelve instructors were chosen for the work, one superintendent and three associates for each institute.

I.—REPORT OF THE SOUTH GEORGIA INSTITUTE, AT AMERICUS, 1882.

By W. H. BAKER, *Director.*

According to instructions issued by the State school commissioner, the institute was organized under the direction of W. H. Baker, Savannah; John M. Gannon, Savannah; John Neely, Americus; and B. T. Hunter, Albany. At a preliminary meeting, Mr. John Neely was appointed secretary. It was decided at this meeting that in the conduct of the institute the system of lectures should be combined with the routine of work usually done in the best schools.

The accompanying list will show that there were in attendance 41 white and 41 colored teachers, representing 22 counties. Daily instruction was given in arithmetic, English grammar, geography, reading, and spelling. This instruction was not entirely of a technical and theoretical character, but it was the endeavor of each instructor to give it that direction which would make the same available in the practical work of the school room.

It was very gratifying to note the fidelity, earnestness, and enthusiasm with which the teachers devoted themselves to their self imposed tasks. Day after day, during the excessive heat of August, they were present, intent upon receiving all the instruction that could be given in the short time allotted to the session of the institute. Questions were freely asked as to the best way of meeting the peculiar difficulties encountered in the daily experience of the teacher and opportunities were afforded for discussions of the most approved methods of teaching.

In the colored class the work was of a very elementary character. These teachers, however, addressed themselves with great zeal to the performance of the duties required of them and showed a commendable desire to fit themselves for their important work. At the close of the session a written examination was had on each subject and the results of the same placed upon the certificate given to each teacher.

The institute was unquestionably a great success, and the teachers returned to their homes and to their work with renewed interest and with a determination to put into practice what they had learned.

I am satisfied that the cause of public education in the State would be advanced by the multiplication of these institutes. They should be so located as to be accessible to all the teachers of the different sections with the least expense.

The success of our educational system depends in large measure upon the intelligence of the teachers employed, and in the infancy of the system it is especially important that those who are appointed to teach in the schools should be thoroughly trained for their work.

The instructors and the teachers of the institute are under obligations to Dr. A. J. Battle and Prof. J. E. Willet, of Mercer University, and to the Hon. J. H Smart for lectures during the session. They are indebted to the good people of Americus for their generous hospitality and for the interest they manifested in the success of the institute.

II.—REPORT OF THE MIDDLE GEORGIA INSTITUTE, AT MILLEDGEVILLE, 1882.

By B. M. ZETTLER, *Director*.

I entered into correspondence early in July with the instructors named by the State school commissioner as my associates, with a view to dividing the work to be done. Superintendent Benjamin Neely, of Augusta, expressed a preference for arithmetic; Rev. J. T. McLaughlin, of Talbotton, preferred reading and spelling; and Prof. W. B. Bonnell, of Covington, asked that English grammar and composition be assigned to him. These preferences were gratified, leaving geography and penmanship to be cared for by myself.

By previous arrangement, the instructors met in Milledgeville on Monday, July 31, to compare views and arrange a definite program. It was decided that there should be a daily session of four hours in each department, white and colored, of the institute, both beginning at 8.30 A. M. and closing at 12.30 P. M., and that the session should be opened each day with short devotional exercises conducted in turn by the four instructors.

The white department was formally opened in the Middle Georgia Military and Agricultural College building, at 9 o'clock, Tuesday, August 1, with an attendance of 30 teachers and others interested in the work of education. A brief statement was made by each instructor, setting forth the manner in which the respective subjects would be presented, and the daily program was announced and information given in reference to text books and other matters connected with the institute. A short recess followed, to afford social intercourse, after which the class was dismissed and the instructors proceeded in a body to the Eddy school-house to organize the colored department. Ten teachers were in attendance and the class was at once organized. The same order of exercises was given as had been presented in the white department and at 1 o'clock the class was dismissed for the day.

The attendance in each department increased daily, until it reached 55 whites and 25 colored. The average daily attendance for the term of four weeks, as shown by my register, was 48 whites and 23 colored, making a total daily attendance of 71. The total number enrolled at the close of the term was 68 in the white department and 47 in the colored, or a total in both of 115.

Sessions were held regularly, according to our program, each day for four weeks, except Monday, July 31, which was spent, as above stated, in making definite arrangements for the work.

In addition to the regular exercises, we had on each Friday an "experience meeting," in which questions relating to school difficulties and matters occurring daily in school were propounded and discussed. Among these were the following: (1) How can regular attendance be secured? (2) How can good lessons be secured? (3) Ought prizes ever to be offered in school? (4) How long ought geography to be studied as a daily lesson? (5) When should English grammar be taken up? (6) How can reading be taught when each child in the class has a different reading book? (7) Should pupils be kept in after school? (8) What is the best form of report to send to parents?

These experience meetings were greatly enjoyed by the class and were perhaps, for the time they consumed, the most profitable exercises of the institute.

During the term two evening lectures were delivered, one by Hon. J. H. Smart, formerly State school superintendent of Indiana, and the other by Rev. Mr. Stoney, of Milledgeville. The former was, on request of the colored teachers, repeated in the colored Baptist church for the benefit of the colored people, very few of whom were present at the first lecture.

Two entertainments, consisting of songs, recitations, and calisthenics, were also given by the teachers and pupils of the Middle Georgia Military and Agricultural College. These lectures and entertainments were largely attended and were much enjoyed by the members of the institute.

Of the value of the institute to the teachers and others in attendance there was but one opinion. The universal verdict among them was that every member had been benefited. Numerous inquiries from teachers who were unable to attend this year as to when and where the next institute will be held leave no room to doubt that the work is appreciated by many of those for whose direct benefit it was undertaken.

In my judgment there is no more important work in connection with our public school system than that of training teachers, and I think it would be true economy on the part of the State to expend a portion of her school revenue in providing for this work, either by organizing "migratory" institutes, to move from section to section, or by establishing a "normal school" in some locality where board is cheap, and providing for a number of scholarships, say of $100 in value, to be awarded on merit and upon certain conditions of service in return after graduation.

Through the valuable assistance and coöperation of Mr. L. Carrington, school commissioner of Baldwin County, the teachers were all comfortably provided for at very reasonable rates of board, the whites paying $15 and the colored $10 per month.

III.—REPORT OF THE NORTH GEORGIA INSTITUTE, AT TOCCOA, 1882.

By H. C. Mitchell, *Director.*

The institute opened at the Methodist church in Toccoa on the 1st day of August, with upwards of twenty teachers in attendance, which number was increased from day to day until we had enrolled 45 white teachers, 10 colored, and 15 county commissioners — total 70, representing 30 counties.

It was our object from the first to make our institute a model of plain, practical school work, using the most approved methods, and this end was kept constantly in view.

We had four instructors present, viz: Prof. S. P. Sanford, of Mercer University, Miss Laura Haygood, of the Girls' High School of Atlanta, Mrs. F. C. Mallon, of Atlanta, and the writer of this report.

The branches of study assigned to the writer were geography and history. In one or the other of these he conducted daily recitations. He endeavored in these recitations to make use of the best methods and he gave especial attention to the study of the map of the State of Georgia, using for this purpose the surveys made by the State and reviving as many historical incidents of the State as possible.

Prof. S. P. Sanford had charge of the department of arithmetic and gave daily lessons on the best method of teaching that science, illustrating his instructions by numerous practical examples in the fundamental rules, as also in reduction, fractions, percentage, proportion, &c. The superior advantages of the analytic method were fully discussed before the teachers, and clearness and simplification in the presentation of subjects, especially to beginners in arithmetic, were strongly urged.

The metric system was also explained and illustrated by models of the metre, gram, litre, &c.

The department of primary reading, primary grammar, and penmanship was ably represented by Miss Haygood.

Mrs. Mallon gave a series of highly successful lessons in reading and elocution, which were varied with instruction in the hygiene of the school room and the analysis of English poetry.

Mr. Smart, of Indiana, an able school officer and general superintendent of all the institutes, edified the teachers to a high degree by his most valuable lectures on school instruction and management.

Another feature of the institute was the delivery of a series of popular and scientific lectures by prominent educators and public men during the evenings. These lectures were well attended by the teachers and citizens. Among the lecturers were Dr. H. H. Tucker, Judge Bleckley, Prof. White of Athens, Dr. C. W. Lane of Athens, Col. Samuel Barnett, Prof. Rufus Smith, Col. David W. Lewis, and Dr. J. H. Smart.

We had in attendance a body of very intelligent teachers from every part of the State, from the public schools of Savannah, Macon, Atlanta, and Americus, from Athens, Washington, Newnan, Gainesville, Louisville, Forsyth, and from very many counties in the State.

The local schools of Toccoa were often in attendance upon our sessions.

At the close of the institute certificates of attendance were issued to the teachers and the writer shares in the opinion he often heard expressed that the session of the North Georgia Teachers' Institute accomplished much good for the educational interests of Georgia.

CHAPTER V.

The reader has seen the kind of work actually done in some of the various teachers' institutes of States and cities; but the local and rural institute — the county institute — yet remains for inspection. The pages to follow contain specimen programs of this work in Michigan, Indiana, West Virginia, Illinois, and Massachusetts.

A.—MICHIGAN.

The Hon. Varnum B. Cochran, State superintendent, prefaced the program of 1881–'82 with a short introduction, from which the following explanation of its origin and purposes is derived:

These outlines were the result of several years' experience in institute work in this State. At the State institute held at Lansing, July 5–8, 1881, a number of the most experienced institute conductors and instructors of Michigan were invited to present outlines of work for the institutes of 1881–'82. They were requested to make free use of anything contained in the manual published two years before, which had stood the test of experience and use, and also as freely to reject any and all matter which to them seemed to demand change. Every syllabus received frank and full criticism from all present, and ample notes and suggestions were prepared as a further aid in shaping the outlines for publication. The result is presented herewith. To a certain extent, therefore, these outlines are the joint product of the whole institute corps of the State after three or four years of active work and experience.

These outlines were designed to furnish ample material for the work of two years. In practice they are susceptible of almost indefinite elaboration, and instructors will find it equally important to avoid the one extreme of excessive detail and the other fault of obscure generalization.

A program for a week's institute work follows the outlines. In accordance with the unanimous expression of the conductors, especial emphasis is given to certain subjects. No attempt, however, is made to indicate a subdivision of the subjects for each exercise. This is left to the various instructors as their experience may suggest.

All the subjects treated in the outlines are not in the program. In case it is desired to introduce them a slight change can be made in other subjects on the program as here presented, which is taken from the

MANUAL OF INSTITUTE WORK.

OPENING WORK.

I.—*The objects of teachers' institutes.*

1. To increase the efficiency of the teacher: (*a*) By giving a distinct idea of the true ends of education; (*b*) by giving some elementary knowledge of the science of teaching; (*c*) by illustrating and enforcing the best methods of imparting instruction; (*d*) by giving a correct idea of what constitutes a good school.

2. To secure a greater degree of uniformity in our work, in methods of organization, records, teaching, government: (1) By promoting acquaintance and interchange of ideas (*a*) among teachers of the vicinity; (*b*) from other parts of the State and from other grades of schools. (2) By promoting professional knowledge and spirit. (3) By securing coöperation of the teachers of the State with the department of public instruction.

3. To correct prevailing faults, involving (*a*) waste of time in movements of pupils, in conducting recitations, in repeating work done by previous teacher; (*b*) wrong methods arising from defective knowledge and lack of experience.

II.—*Hints to institute members.*

1. Take notes and preserve them for future use.
2. Without being urged, enter earnestly and heartily into all exercises, take criticism good naturedly, and be companionable.
3. Attendance on all exercises should be prompt and regular.
4. Make yourselves agreeable in the families in which you stop and in the town, both for your own sake and the sake of the cause.
5. Members should bear in mind that the institute is a school, not a debating society; instructors, that they are to teach and exemplify rather than lecture.
6. Interruption of instructors during an exercise by questions is to be guarded against by a fixed time for answering questions.

DIDACTICS.

Many general principles were embodied in the various outlines as presented at the State institute. As they are applicable to all teaching and are so vitally related to most of the subjects, it has been thought best to group them under a general head and present them as an introduction to the specific treatment of the topics. It is suggested that a consideration of these principles will aid instructors in a harmonious presentation of their work.

1. The immediate end of school work is results as shown by the learner's power to use what he has learned.
2. The end can be gained only by giving undivided and persevering effort to it.
3. Skill comes only by doing, and must go before real and full knowledge. This is nature's order. To reverse this, for the learner, whatever mature minds may try to do, is only harmful.
4. The worth and scope of the results gained by the pupil depend almost wholly on the will, energy, earnestness, and clear headed work of the teacher.
5. One simple idea, in applying which all patchwork is avoided, should run like a beam of light through the teacher's work of developing and the pupil's work of mastering a subject.
6. Every mind, in work requiring quickness and accuracy, gains these by a division of labor: first a clear thought and then an undivided mind in the application of that thought to the matter in hand.
7. The connection between expression and knowing is so vital that a clear perception of it should be scored into every teacher's mind.

8. The forms of written work should be simple, consistent, and comprehensive, and should be held to, but not talked about.

9. Plans of teaching are determined by (*a*) age and intelligence of pupils; (*b*) time allotted to the study; (*c*) means of reference, books, maps, &c.; (*d*) objects to be attained.

10. The following should be the pupil's order of progress: (*a*) The obscure whole of perception; (*b*) analysis; (*c*) synthesis; (*d*) the clear whole of comprehension.

SCHOOL LAW.

NOTE.—The references given below are to the General School Laws of Michigan, edition of 1881, a copy of which will be furnished to each institute instructor. Many points in regard to the privileges and responsibilities of teachers have not been made subjects of statutory provisions, but are governed solely by the law of custom and the decisions of courts.

I.—*Teachers should know something of it, because*

1. It directly concerns them as to (*a*) their preparation and qualification; (*b*) their duties and obligations; (*c*) their privileges and liabilities.

II.—*A "qualified teacher" is*

1. One who holds a certificate in force, granted by (*a*) State authority, § 165; (*b*) board of instruction of normal school, § 164; (*c*) township superintendent, § 128; (*d*) county board of school examiners, § 128; (*e*) district board working under special charter or in incorporated city, § 137.

III.—*Teacher's certificate.*

1. Necessary because: (*a*) school officers cannot contract with an unqualified teacher, §§ 40, 128; (*b*) no public money can be paid to an unqualified teacher, § 38; (*c*) districts employing an unqualified teacher cannot draw public moneys, § 56.

2. Requirements: (*a*) form of certificate, § 128; (*b*) examination shall be (1) thorough and full, § 128; (2) particular studies required, § 128; (*c*) teacher must be qualified in respect to (1) moral character, § 128; (2) learning, § 128; (3) ability to instruct and govern a school, § 128.

3. Gradation: (*a*) first grade, § 129; (*b*) second grade, § 129; (*c*) third grade, § 129; (*d*) special, § 129.

4. Revocation: (*a*) State certificate, § 165; (*b*) normal school certificate, § 164; (*c*) township superintendent's certificate, § 128; (*d*) county board's certificate: (1) for what reasons, § 130; (2) how, § 130.

5. Suspension: (*a*) for what reasons, § 130; (*b*) how, § 130.

6. Fees: (*a*) institute, § 154; (*b*) special certificate, § 129.

IV.—*Teacher's contract.*

1. Parties to the contract, § 40.

2. How authorized, § 33.

3. Character of contract, § 40.

4. Conditions of contract: (*a*) Time, § 40; (*b*) wages, § 40; (*c*) register of school, § 40; (*d*) teacher to keep himself qualified, § 40; (*e*) holidays, Appendix A, ¶ 43; (*f*) suspension of school, Appendix A, ¶ 44; (*g*) services as janitor.

5. To be in duplicate, § 40.

6. When may be annulled.

V.—*Studies and text books.*

1. Who prescribes, § 42.

VI.—*Authority of a teacher.*

1. Rules and regulations, § 44.
2. Suspension and expulsion, § 44.
3. Detention of pupils after school.
4. Place: (*a*) In the school room; (*b*) on way to and from school.
5. Corporal punishment.

VII.—*Responsibility of teacher.*

1. Oversight of (*a*) buildings and apparatus; (*b*) pupils: (1) in school; (2) out of school.

2. Instruction, including: (*a*) Arrangement of program; (*b*) classification of pupils; (*c*) thoroughness; (*d*) approved methods.

3. Government of school: (*a*) Efficient; (*b*) proper.

NOTE.—The foregoing is of a general nature and is of interest to school officers and teachers, irrespectively. The following topic has been added as of special interest at this time, in view of the changes in the school law regarding the system of local supervision. It is suggested that it be made the basis of any work which institute instructors may do at a special session of the county and township school officers.

VIII.—*Local supervision.*

1. County board of examiners: (*a*) Number, how and when chosen, term of office, § 125; (*b*) organization, officers, &c., § 126; (*c*) duties of secretary, § 133; (*d*) meetings of board: (1) annual, for organization, § 126; (2) special, as board may deem fit or as called by secretary, §§ 132, 133; (*e*) examinations: (1) regular, public, in March and October, at county seat, § 127; (2) special, public, time and place fixed by the board, § 127; (3) special by secretary (certificate good till next public examination), § 129.

2. Chairman of township board of inspectors: (*a*) Duties, § 134: (1) visiting schools of his township, how often; (2) acts upon the advice and instructions of the board of school examiners, joint meeting; (3) reports to board of school examiners, in general and as to special schools.

3. Joint meeting of county and township officers, § 131: (*a*) Time, place, purpose.

4. Removals, vacancies, compensation, &c., §§ 135, 136.

5. General suggestions.

ORGANIZATION OF DISTRICT SCHOOLS.

I.—*Preliminary work.*

1. Visitation: (*a*) Of board; (*b*) of predecessor; (*c*) of parents.

2. Examination: (*a*) Of records, which should be left in as complete order as possible by each teacher at the close of his term; (*b*) of buildings, grounds, &c.

3. First day: (*a*) Be early at school; (*b*) have all preparations completed before the hour for commencing school; (*c*) take names of pupils as soon as they reach school and learn what you can relative to their studies; (*d*) call to order *on time;* (*e*) introduce yourself with a few pleasant remarks; (*f*) make opening exercises short; (*g*) complete enrolment, probably only few names to be added.

II.—*Temporary organization.*

1. Assign lessons: (*a*) To first and second reader classes, reading lessons; (*b*) to third, fourth, and fifth reader classes, arithmetic lessons; (*c*) assign the last lessons of the preceding term with a short advance.

2. Hear the lessons assigned in the above order, assigning other lessons in the same subjects and in the subject next in order for the day.

3. Begin with the order of study and recitation that you think it will be desirable to continue.

III.—*Permanent organization and program.*

NOTE.—Conductors will be furnished with copies of the course of study and daily program for district schools for distribution to members of the institute. It is requested that the second exercise upon this topic be devoted to a full and careful exposition of the course as outlined and to an explanation of the working program. For this purpose it is suggested that instructors make themselves familiar with the course and program and urge upon teachers its practical value and utility.

SCHOOL GOVERNMENT AND DISCIPLINE.

I.—*The true object of school government.*

1. The development of the power and habit of self-government: (*a*) By imparting to the pupils correct views of their relations to their superiors, equals, and inferiors; (*b*) by forming in the pupils the habit of considering carefully the consequences of acts before they are performed; (*c*) by imparting to the pupils the power and habit of doing under all circumstances what they know or believe to be right.

II.—*The elements of the pupils' nature through which he should be governed.*

1. The power of imitation and habit.
2. The power of being attracted and repelled: (*a*) Through the physical nature; (*b*) through the intellectual nature; (*c*) through the moral and spiritual nature.
3. The power of perceiving right and wrong.

III.—*Appliances which should be used in school government.*

1. The teacher's own course of conduct: (*a*) Should make the golden rule a living reality in and out of school; (*b*) should have self control and be master of everything pertaining to the school; (*c*) should have tact and a lively interest in the work and amusements of the pupils; (*d*) should be frank and strictly honest in dealing with pupils; (*e*) should be an example to the pupils in all matters of conduct.
2. The use of time and place: (*a*) Proper division of the school day; (*b*) proper seating of pupils; (*c*) plan and use of playground; (*d*) promptness in attending to all school exercises; (*e*) proper time and place for the disposal of cases of discipline.
3. The use of exercises and reports: (*a*) Exercises connected with the opening of school; (*b*) music, calisthenics, &c.; (*c*) reports made at irregular or fixed intervals.
4. Punishments: (*a*) Disapproval of teacher and parents; (*b*) temporary loss of privileges; (*c*) corporal punishment (last resort).

COMMON ERRORS IN TEACHING.

ERRORS IN THEORY——LEAD TO——ERRORS IN PRACTICE.

I.—*Arise from ignorance.*

1. Through lack of early education.
2. Through errors in early education.
3. Through failure to keep abreast the best thought of the day.

II.—*Enumeration.*

1. Logical reasoning is expected of young pupils: (*a*) Concerning subjects of study; (*b*) concerning matters pertaining to school government.

I.—*Arise from—*

1. Errors in theory.
2. Lack of natural adaptation to the work.
3. Lack of devotion to the work.

II.—*Enumeration.*

1. (*a*) Too much prominence given to solving problems in arithmetic to detriment of drill upon combinations; (*b*) rules and their application in grammar rather than drill in correct use of language; (*c*) unreasonable demands upon pupils.

2. It does not pay to attend educational gatherings and read educational works.	2. (*a*) Extreme conservatism; (*b*) little growth; (*c*) rare promotion; (*d*) jealousy toward teachers that do grow.
3. A teacher must think and talk of nothing else than school.	3. (*a*) Narrow-mindedness; (*b*) magnifying, unduly, the office of teacher.
4. (*a*) The sole object of studying is the acquisition of knowledge; (*b*) the work of the teacher is principally to instruct; (*c*) the object of recitations is merely to determine the daily progress of the pupils.	4. (*a*) Pupils learn much; can do nothing; are filled, not strengthened; (*b*) continual pouring in, no training to use; continual driving of nails, no clinching; (*c*) proper attention not given to making pupils self confident; teacher does not illustrate and explain properly.
5. The word method *solely* is the correct plan of teaching reading.	5. (*a*) Pupils not prepared for subsequent work; (*b*) do not have vocal organs cultivated to distinct articulation.
6. Children are taught to read merely that they may entertain others.	6. (*a*) Pupils taught to read fluently rather than intelligently; (*b*) good reading in school, poor reading elsewhere; (*c*) taste for reading not cultivated.
7. (*a*) Like offences should receive like punishment; (*b*) stupidity in a pupil is a crime.	7. (*a*) Some punishments too severe, others too light; (*b*) pupils unjustly blamed, unnecessarily discouraged.
8. (*a*) Parents have no rights except to pay taxes; (*b*) fault finding by parents is a sure indication that they are unreasonable.	8. (*a*) Patrons ignored; (*b*) teacher lacks support; (*c*) failure to study one's own faults.
9. No preparation is necessary for work of lower grade.	9. (*a*) No illustrations, or poor ones; (*b*) waste of time; (*c*) unsystematic work; (*d*) failure to make most possible out of lesson.
10. Self government is not necessary to the government of others.	10. Getting angry: (*a*) With pupils; (*b*) with parents.
11. Self control is not essential to the best disciplinary and teaching work.	11. Talking: (*a*) Too much in (1) assertion of authority; (2) reprimanding offences; (3) telling pupils what they can find out themselves; (4) telling pupils what they cannot understand; (*b*) too loudly (1) wearies teacher unnecessarily; (2) disturbs school.
12. Quantity rather than quality is the measure of progress.	12. Advancing pupils too rapidly: (*a*) Real progress retarded; (*b*) pupils discouraged; (*c*) injustice to subsequent teacher.

ART OF ILLUSTRATION.

I.—*Preliminary remarks.*

1. Power of recollection depends upon strength and clearness of conception.
2. Conceptions may be (*a*) strong and vigorous or weak and languid; (*b*) clear and distinct or obscure and indistinct.

II.—*Purpose of illustration.*

To render the obscure plain and the weak vigorous, thus putting the mind in condition to conceive clearly and strongly, and hence to remember the point illustrated.

III.—*Illustrations are of two general classes.*

1. Those addressed to the senses: (*a*) To the eye: (1) Drawing, showing points of resemblance, of contrast; (2) manipulation: sticks, books, papers, apparatus; (3) special gestures; (*b*) to the ear: vocal imitation; (*c*) to the eye and ear: imitations and personations.

2. Those addressed directly to the mind: (*a*) Illustrations by examples; (*b*) illustrations depending on analogies: (1) Upon a simple analogy; (2) success depends upon the state of knowledge of those addressed; (3) the analogy may depend upon antecedent analogies; (4) the analogy may be only hinted, not expressed in full; (*c*) the same proposition may be illustrated by example and analogy.

IV.—*General principles.*

1. An illustration should illumine, not obscure, the subject; should throw light on the topic, not draw attention to itself.

2. Should be simple, not complex; if complex it may fail of its purpose by directing attention to its parts.

3. General test of an illustration: can it be portrayed to the eye?

V.—*Skill in illustration important to the teacher.*

1. Conception of teacher and pupil may not coincide: (*a*) Pupil may fail to grasp the new idea; or (*b*) teacher uncertain that his own conception is grasped by the pupil.

2. Teacher must find some known ground: (*a*) That is common to both; (*b*) that bears some obvious relation or analogy to the new idea.

3. The novel is thus associated with the familiar and the known is made to teach the unknown.

VI.—*Improvement in this art.*

1. As it appeals to the senses: (*a*) Skill in drawing: studies in form, perspective, shading, practice; (*b*) manipulation: boldness, knowledge, practice; (*c*) imitation and personation: voice culture, study of persons with reference to manners and character.

2. As it appeals directly to the mind: (*a*) Skill in examples depends upon experience and reading and demands a retentive and ready memory; (*b*) skill in analogies depends upon extensive and accurate observations of nature and life and demands an active poetic imagination.

THE ART OF QUESTIONING.

I.—*This art has four main purposes.*

1. To induce a reproduction of the pupil's knowledge.

2. To stimulate his curiosity and his diligence by discovering the limitations of his information.

3. To resolve potential knowledge and energy into actual knowledge and power.

4. To keep the teacher informed of the mental state and the mental needs of his pupil: (*a*) Reproduction is an essential phase of the knowing act; a truth is not adequately understood till it has been restated in the pupil's own language. (*b*) A pupil is not in a fit condition to learn till he sees the relation of what he already knows to that which remains to be known. (*c*) A pupil may be able to employ minor processes, but may never have coördinated these into higher and more complex processes; or he may already know the elements of a judgment without having made the discriminations necessary for comparison. (*d*) Instruction can be a rational process only when a fair estimate can be formed of the pupil's mental power and of the material needed for the use of this power.

II.—*Questions should be*—

1. Clear, concise, and of such a nature that the responses, taken collectively, will form a systematic exposition of the subject.

2. So far as possible, questions should be stripped of all verbiage and answers should be given in complete sentences.

3. When responses are to be written, questions may be more comprehensive, demanding of the pupil greater deliberation and a higher type of mental activity.

4. In general, oral examinations cultivate promptness and test the range of the pupil's knowledge, while written examinations cultivate the power of independent and continuous thinking and test the accuracy of his knowledge.

III.—*To be a good questioner*

implies an articulate knowledge of the subject; and it is a valuable discipline for pupils, on occasion, to question their classmates.

RELATIONS OF PARENT AND TEACHER.

I.—*Teachers should acquaint parents with and interest them in school work.*

1. Indirectly: (*a*) Through the pupils; (*b*) through the press; (*c*) by the interest manifested by the teacher himself; (*d*) by making his teaching a success.

2. Directly: (*a*) By mingling and conversing with parents; (*b*) by class work done in the presence of parents; (*c*) by some public literary enterprises in connection with the school work.

II.—*Teachers should secure the coöperation of parents.*

1. In the matter of discipline: (*a*) By communication through the pupils; (*b*) by direct communication.

2. In the matter of work: (*a*) By showing the reasonableness of what is required: in amount, in its nature, and in the order pursued; (*b*) by inciting reasonable pride in the progress of pupils.

III.—*The teacher should preserve a true dignity and exhibit proper respect for parental authority.*

1. By avoiding gossip, especially in local affairs.
2. By courtesy towards parents.
3. By a readiness to explain plans and reasons.
4. By a conformity to the wishes of parents so far as may be consistent with the success of school work.
5. By consulting parents in regard to the discipline, studies, and morals of their children.
6. By faithfully reporting, when necessary, the standing and deportment of pupils to their parents.

MORALS AND MANNERS.

I.—*Fundamental ideas.*

1. Those principles should be inculcated which will develop genuine character and make good citizens in the most comprehensive sense.

2. The good of the state demands moral as well as intellectual and physical training.

3. Correct morals and good manners are necessary to the best interests of society.

4. Morals relate to the things that ought or ought not to be done: oughtness or oughtnotness.

5. Intellectual culture is of little value if it is not associated with true character.

II.—*Important suggestions.*

1. A person by the practice of good morals makes himself a good member of society; by attending to good manners, he renders himself an agreeable companion.
2. The unconscious influence of the teacher should ever be kept in mind.
3. The teacher should set just such an example, at all times and in all places, as he would desire his pupils to imitate.
4. That the pupil may discharge his duties freely, he should (*a*) know what is right; (*b*) feel the claims of the right; (*c*) will to do the right.
5. Moral instruction can best be given by incidents, anecdotes, stories, illustrations of noble principles, biographies of the great and good.
6. The Bible is the fundamental text book on good morals.

REMARK.—Let it be distinctly understood that this does not mean teaching denominational or technical christianity.

III.—*Method.*

1. Character of the teacher essential: (*a*) Prudent; (*b*) honest; (*c*) courteous; (*d*) a warm heart; (*e*) an even temper; (*f*) a genial nature; (*g*) an earnest manner; (*h*) a cheerful countenance.
2. The teacher must remember that in the child's moral nature *sympathy* is the ruling impulse and *influence* the controlling power.
3. He must love and secure the confidence of his pupils before he can influence them rightly.
4. Let the teacher's whole example and life be a standing rebuke to every moral delinquency and an encouragement to every virtue.
5. Take illustrations from (*a*) common life; (*b*) school room, playgrounds, school discipline; (*c*) relations of pupils to one another, to their parents and teachers.
6. Special topics, to be treated of at stated times or as occasion offers: (*a*) Honesty; (*b*) kindness; (*c*) truthfulness; (*d*) unselfishness; (*e*) respect to superiors; (*f*) purity in thought, word, and action; (*g*) obedience to teachers, parents, and civil authorities.
7. Correction of evil and bad habits: Idleness, profanity, lying, stealing, obscenity, use of tobacco, intemperance, &c.
8. Formation of good habits: Industry, cleanliness, self reliance, cheerfulness, promptness.
9. Attack prevailing evils by a kind and thorough general talk; special ones, singly and in private.
10. Illustrate the method of treating one of the evils mentioned in 7.

NOTE.—The topic to be treated of may be announced beforehand, that the pupils may think about it.

ELEMENTARY SOUNDS.

I.—*Reasons for presenting the subject.*

1. To correct our own errors in pronunciation and articulation.
2. To awaken an interest in orthoepical study.
3. To secure uniform and correct teaching in schools.
4. To secure uniform and correct speech among the people.

SUGGESTIONS.—The institute should be treated as a class and led to utter abundandant examples (sounds, not words or syllables) under each head. Especial attention should be given to the position of the vocal organs for the correct utterance of each sound. At the close of one exercise, the lesson for the next should be put upon the board, and the members of the institute be requested to bring into the class a number of words illustrating the sounds indicated and to pronounce them. The exercise should give opportunity for mutual criticism and for perfect freedom in asking and answering questions.

II.—*Classification.*

1. Vocals or tonics: (*a*) Simple vocal sounds; (*b*) diphthongs.
2. Subvocals or subtonics.
3. Aspirates.

III.—*Represented by*

1. Letters: (*a*) Vowels; (*b*) consonants.
2. Diacritical marks: (*a*) For vocals: macron, breve, &c.; (*b*) for subvocals and aspirates: bar, cedilla, &c.

IV.—*Combined into*

1. Syllables.
2. Words.

V.—*To study any sound, as ă, b, p.*

1. Pupils form the sound singly and in concert.
2. Write on the board the various letters and diacritical marks used to represent the sound.
3. What do the marks indicate?
4. Classify the sound as (*a*) vocal: (1) simple; (2) dipthongal: its simple elements, (*b*) subvocal; (*c*) aspirate.
5. Require class to make lists of the words in which the sound occurs as variously represented.
6. Correct errors in same manner as in written spelling.

VI.—*Study the sounds a̤ ĭ, oi, ġ, and others.*

VII.—*Study the sounds ä, ē, ī, s, and others.*

VIII.—*To study words as to their elementary sounds.*

1. Pronounce the word.
2. State the number of syllables.
3. Spell the word by sound and pronounce syllables separately.
4. Utter and classify each sound, as vocal, subvocal, or aspirate.
5. Name silent letters.
6. Write the word on slate or board, with the proper diacritical marks.

IX.—*Study ten words selected from reading book.*

NOTE.—Instead of giving a full table of elementary sounds, with their letters and diacritical marks, it is thought best to refer the instructor and the institute to the dictionary, which should be in the hands of every teacher.

The study of the dictionary is of the greatest importance and its use in connection with all school exercises should be carefully taught.

SPELLING.

I.—*Correct spelling depends upon cultivation.*

1. Of memory.
2. Of hearing.
3. Of sight.

II.—*Material.*

1. The child's vocabulary.
2. Words in the reading book.
3. Words in the spelling book.
4. Words in other text books.
5. Misspelled words from compositions and other written exercises.
6. The dictionary: (*a*) For correct spelling; (*b*) for correct pronunciation.

III.— *Oral spelling.*

1. Pupils should be drilled in vocalization: (*a*) Until they can readily distinguish the various sounds of the different letters and their combinations; (*b*) until they are able to spell each word by sound and by letter, to name the silent letters, and to explain the use of substitutes.

IV. — *Written spelling.*

1. Should be introduced as early in the course as possible.

2. Should be employed with special reference to training the eye to know words by their forms.

3. Diacritical marks should be thoroughly mastered.

4. All written work should be done in the best and most careful manner.

V.—*Suggestions.*

1. Have it understood that learning the spelling is an essential part of each lesson in all the text books used.

NOTE.—The time of other lessons, however, should not be given up to spelling.

2. Teachers should make lists of misspelled words for use in reviews and drill work.

3. Assign definite lessons in spelling book, note misspelled words, and give extra work thereon.

4. Review frequently and sometimes without previous notice. Omit all words of infrequent use.

5. Aim to make the pupil's knowledge of words such as will enable him to use them intelligently.

6. If a word properly begins with a capital, it is a misspelling to begin it with a small letter; failure to use a necessary apostrophe is also misspelling.

7. But few rules should be taught and these by induction.

8. With the pupil's progress the attention given oral spelling should diminish, while that given written spelling should increase.

PRIMARY READING.

I.—*Preliminary remarks.*

1. Good reading is essentially good talking.

2 The tests of a pupil's reading are: (*a*) Does he read as he talks? (*b*) Does he read so that every member of the class can easily understand him without looking on the book?

II.—*Methods.*

Pupils may be successfully taught to read by a variety of methods, as the alphabetic, the phonic, and the word methods; or a combination may be employed. The word method, modified somewhat by the other methods, is now used with excellent results in many of our best schools.

III.—*Early lessons.*

1. Place before the class: (*a*) An object, as a hat; (*b*) a picture of the object; (*c*) the name word of the object.

2. Have pupils point successively to the object, the picture, and the name word, and tell what each is.

3. Lead pupils to talk about the object, observing that they speak the name word correctly.

4. Place upon the blackboard short sentences containing the lesson word and have the pupils find it.

5. Other name words, also quality words, may be learned in the same manner, and other words may be introduced until all the words found on the first pages of the reading book used in the school have been thoroughly learned.

6. Place the words as fast as learned in columns on the blackboard for reviews. "Printing" or "script" may be used.

7. Pupil should copy the lesson on his slate, either by writing or printing.

8. Combine the words learned into short sentences, which should be placed upon the blackboard.

9. Read the lesson to the class and have it read in concert before the individual members are required to read it.

10. Have the pupil look through each sentence before he attempts to read it.

11. Have pupils read the lesson backwards, to make certain that they know the words.

12. The work should be done from the blackboard or from charts arranged with reference to the book to be used.

13. The reading exercises should be frequent and very short, not exceeding ten minutes in length.

14. Spelling: (*a*) By letters: (1) Place upon the blackboard some easy word, as, bat; separate it into parts, as b-a-t; teach the pupils to recognize the letters and to call them by name; (2) proceed in same manner with other words, introducing but one new letter at a time. (*b*) By sound: (1) Write some easy word, as bat; teach the pupils to "spell the word by sound," or, what is the same thing, to pronounce it slowly and disjointedly, as b–a–t; (2) proceed in the same manner with other words, introducing but one new element at a time, as bat, bad, bed, be*a*d, rat, ran, run, wren, cat, cap, cup, cap*e*; (3) in words containing silent letters pupils should be taught to indicate them by cancelling them with a short vertical or oblique line.

NOTE.—The time when spelling by letters and by sounds is begun varies with different teachers: some begin with the first words learned; others, when about fifty words have been learned; others, not until pupils enter the first reader.

IV.—*Book work.*

1. Assign short lessons; write them on the blackboard and have them copied on the slates; examine each slate with regard to spelling, capitals, and punctuation.

2. Read the lesson to the class when it is assigned.

3. Explain and pronounce every new word in the lesson.

4. Teach pupils to follow the line while others are reading.

5. The articles *a* and *the* should be read as if they formed a syllable of the following word.

6. Never allow a pupil to read the lesson aloud until he can call all the words at sight.

7. Have each pupil read the whole lesson.

8. Do not allow a scholar when reading to be interrupted by corrections or made nervous by upraised hands. Corrections should be made after the reading.

9. Give special attention to correct expression; bring out the thought in the most forcible manner; avoid the high, unnatural school tone and the slow monotone.

10. Pupils should be taught to give the meaning of the story as soon as they can read it well.

11. Have drill exercises in pronouncing lists of words that pupils frequently mispronounce.

12. Give special drill on elementary sounds, both vowels and consonants.

13. Make the spelling a separate exercise from the reading; but use the words of the reading book and keep in advance of the reading.

14. Review systematically: have regular *immediate* and *remote* reviews

ADVANCED READING.

I.—*The end to be accomplished.*

1. To gain knowledge: (*a*) Incidentally from the reading book; (*b*) mainly by securing ability to read all books intelligently.

2. To form the reading habit.

3. To improve in language: (*a*) By enlarging the vocabulary; (*b*) by learning the meaning and derivation of words.

4. To cultivate the organs of speech: (*a*) By correct position of the body; (*b*) by correct habits of breathing; (*c*) by distinct articulation.

5. To produce an effect on the mind of the hearer, to convey knowledge; emphasis, expression, &c.

II.—*Lessons.*

1. Assignment of lessons: (*a*) Length of the lesson; (*b*) how to study the lesson: (1) with reference to some single point in correct habits of reading; (2) with reference to the subject matter; (*c*) lessons for individual pupils: (1) for reading; (2) for recitation.

2. Test exercises, occasionally calling on pupils to read lessons without special preparation.

III.—*How to criticise the pupil.*

1. Upon his understanding of the lesson.
2. Upon some one point, for which special study has been required.
3. General criticism.

NOTE.—In connection with this subject, the instructor should conduct a model exercise in reading, illustrating various methods of criticism.

IV.—*Use of the library and general reading.*

1. For school exercises: (*a*) Select the best pieces in various styles; (*b*) have such pieces committed to memory and recited; (*c*) use dialogues and conversations to secure naturalness; (*d*) anecdotes, tales of adventure, &c., can be learned out of the class and told in the class; (*e*) vary the exercise by reading from the platform, reading in front of the class, from a distant part of the room, &c.; (*f*) use imitation reading sparingly or not at all. Get life and expression by holding the attention to *what is said*.

2. For the personal culture of the pupil: (*a*) Use for reading only *literature* of a high order, such as is directly connected with those purposes for which the school is maintained: citizenship and the art of right living; (*b*) if the history of our country and an account of its government and institutions must be omitted elsewhere, they may find a place here; (*c*) a work of hygiene, technology, the science of common things, &c., might be used under the same circumstances. See that the book used is the best of its class; (*d*) all school work should be regarded as work in reading; (*e*) reading at home under the advice of the teacher.

LANGUAGE LESSONS.

I.—*Object.*

1. To speak and write correctly: (*a*) Acquisition of words; (*b*) use of words to express ideas, the structure of the sentence; (*c*) pronunciation; (*d*) manuscript work.

2. A place in the daily program indispensable to successful work.

II.—*Axioms.*

1. Language before grammar.
2. Children learn to speak by imitation.

3. Words (language) are best learned in association with previously acquired knowledge.

4. To do is a condition of to know; we learn to speak by speaking.

III.—*Methods.*

1. Objects best adapted for language teaching in earliest stages: (*a*) Named; (*b*) questions by teacher, answers in sentences by pupils; (*c*) series of questions should be prearranged; (*d*) working model.

2. Pictures: plans as with objects.

3. Stories: (*a*) Oral and written reproduction; (*b*) questions upon reading lessons to be answered nearly in terms of the book.

4. Memorizing choice selections, adapted to all grades: (*a*) Reciting; (*b*) writing out from memory repeatedly, punctuating and capitalizing till correct.

5. Acts and movements described.

6. Calling out errors.

7. Repeated drill upon lists of local inaccuracies and vulgarisms.

8. Synonymous words.

NOTE.—The teacher must have a *plan*. Daily preparation essential. Ex tempore instruction in language lessons tends to become desultory and purposeless.

IV.—*Word studies.*

1. As to form: (*a*) Diacritical marks; (*b*) abbreviations and contractions.

2. As to meaning: (*a*) Prefix and suffix; (*b*) compound words; (*c*) defining: chiefly by synonyms and equivalent expressions; test: the proper use of the word in a sentence; (*d*) derivation, formation; (*e*) use of dictionary.

3. A system of word studies based upon text books. Teachers should not attempt instruction in language lessons without books for guidance.

V.—*Manuscript work, elementary.*

1. Punctuating and capitalizing.

2. Copying words, sentences, paragraphs.

3. Dictation: (*a*) Oral; (*b*) written.

4. Abstracts of reading lessons.

VI.—*Manuscript work, original.*

1. Formal composition: subject selected beforehand and worked up at several sessions of the class preparatory to writing.

2. Much written in all subjects where practicable.

VII.—*Manuscript work: letter writing.*

1. Points to be considered: (*a*) Parts: heading, address, salutation, body, subscription, &c.; (*b*) definition and exact position of each; (*c*) margins: number and width; (*d*) folding: addressing the envelope, superscription; (*e*) arrangement of parts shown by model diagram.

VIII.—*Preparation for the formal study of grammar.*

1. The statement: (*a*) Its two parts.

2. Names, nouns: (*a*) Definition and kinds.

3. Other parts of speech considered: practice in selecting them from the reading lessons.

4. Equivalent forms, as: (*a*) Change of voice; (*b*) interchange of words; (*c*) conversion of words into phrases and clauses; (*d*) supplying omissions and ellipses.

TECHNICAL GRAMMAR.

I.— *Objects and advantages.*

1. A knowledge of the material and mechanism of the language.
2. Readiness and accuracy in the interpretation of literary composition.
3. Readiness and accuracy in the use of language.
4. Grammar is the best, if not the only proper, road to rhetoric.

II.—*Preliminary.*

1. Language lessons should precede and prepare the way for technical grammar.
2. Elementary grammar should be so shaped as to be constantly tributary to composition.
3. *All* grammatical knowledge must be evolved from the sentence, *by inspection* of its elements and their uses.

III.—*Method: the sentence.*

1. Begin with the sentence; develop its nature, its parts, and their offices, at first noting only (*a*) the essential parts of the sentence, when words; (*b*) the adjuncts of each of these parts, when words.

IV.—*Method: parts of speech.*

1. The parts of speech, in the following order: Noun, verb, adjective, adverb, pronoun, preposition, conjunction, interjection.
2. Phrases and clauses, their structure and offices.
3. Equivalence and interchange of words, phrases, and clauses.
4. Fuller etymology of the parts of speech, including subclassifications, inflections, and modifications.
5. Etymological inflection distinctively treated. It applies to (*a*) nouns in respect to number and to a few in gender; (*b*) verbs in respect to number (1 form), tense (2 forms), participle (2 forms); (*c*) adjectives in respect to comparison and a few in number; (*d*) adverbs, to a few only, in respect to comparison; (*e*) pronouns, in respect to person, number, and (limitedly) gender.
6. Connectives make up the following classes: Connectives (*a*) of phrases: prepositions; (*b*) of clauses: relative pronouns, conjunctive adverbs, subordinate conjunctions; (*c*) joining any elements in like construction: coördinate conjunctions.

V.—*Method: parsing.*

1. Parsing should be constant, often written in tabular form. It may be of three kinds, as follows: (*a*) naming the class, part of speech; (*b*) naming the class and office in the sentence; (*c*) naming class, modifications, and office.
2. Special and reiterated attention to some of the idiomatic and more difficult constructions, e. g., infinitives, participles, pronouns, some auxiliary verbs, &c.

VI.—*Method: practical syntax.*

1. Its principles should be illustrated and enforced in suitable examples and in composition with reference to (*a*) words whose forms are determined by their office; (*b*) the choice of the relative pronoun; (*c*) the position of the adverb; (*d*) the proper tense and verb phrase form; (*e*) clearness of reference of such words as "it," "they," "these," &c.; (*f*) choice correspondence and repetition of connectives.

VII.—*Method: analysis.*

1. Analysis proper is the highest form of grammatical study, the fruitage of all that has preceded. Let its methods be simple and direct:

(*a*) Sentences according to signification are (1) declarative, (2) interrogative, (3) imperative, (4) exclamatory.

(*b*) Sentences according to form are (1) simple, (2) complex, (3) compound.

(*c*) Excepting the verb proper, the elements may be thus classified: (1) Elements as to form, word, phrase, clause; (2) elements as to office, substantive, adjective, adverbial; (3) connectives, of phrases, of clauses, joining like elements; (4) independent elements.

(*d*) The analysis of the sentence may be thus represented: Subject, word, phrase, or clause; verb or verb phrase; complement (object or attribute), word, phrase, or clause.

2. Intercomparison and conversion of simple, complex, and compound sentences; of infinitive, participial, and clause constructions.

ARITHMETIC.

Illustrative topics.

1. Notation and numeration: (*a*) Primary methods; (*b*) advanced methods.

2. Fundamental processes: (*a*) Primary, as applied to integers; (*b*) advanced, decimals: multiplication and division.

3. Fractions: (*a*) Primary methods; (*b*) advanced methods.

4. Applied work: (*a*) Denominate quantities; (*b*) percentage proportion.

NOTE.—The above topics will suggest to experienced instructors a sufficient variety of exercises in the principles and operations of arithmetic. To those who desire more detailed work, reference is made to the outlines of 1879-'80.

GEOGRAPHY.

I.—*The nature of geographical science.*

1. The unit to be studied and comprehended is the globe, considered with reference to its surface.

2. As only the merest fraction of this unit can come under the observation of the pupil, his knowledge of it must be derived chiefly from books.

3. The comprehensive study of geography involves a large and constant exercise of the imagination.

4. Geographical knowledge consists (*a*) of mere facts and (*b*) of facts that can be explained by known causes.

II.—*The ends of geographieal study.*

1. The acquisition of clearly defined notions, constituting what is known as useful knowledge.

2. Through the acquisition of this knowledge, the development of the intelligence.

3. Nothing contributes so powerfully towards broadening man's sympathies and making him cosmopolitan and catholic as geographical knowledge.

4. In this day of universal reading, geography should be one of the chief topics of instruction.

III.—*Preparatory course.*

1. The first lessons may be on place, distance, and direction: (*a*) Beginning with the school room, let the pupil note its form, size, parts, and the position of objects in the room. Let all names and terms used be pictured out so that they may ever after be a part of the child's vocabulary; (*b*) teach the points of the compass, and let the pupil locate the parts of the room and the objects within with reference to those

points; (c) let the pupil draw on his slate and on the blackboard an outline of the room and locate on his map the objects named; (d) let him describe, orally or in writing, the location of these points. Thus the pupil's order of work should be, in this as in all subsequent study, *observe* (or study), *draw*, *describe*.

2. Continue these lessons on the *school grounds*, the district or village, and the township, until the pupil can map out and describe all objects within his knowledge.

3. Let these exercises be followed by a series of object lessons: (a) On the surface of the land, including hills, valleys, plains, mountains; soils, rock, clay, sand, &c., and their uses; (b) on water in its various conditions and forms, as ponds, lakes, rivers, and their parts; vapor clouds, dew, frost, rain, hail, &c.; (c) on heat, cold, moisture, dryness, the seasons, thus developing the idea of climate; (d) on the vegetable productions of the land; (e) on animals, wild and domestic, their habits and modes of life; (f) on the people and their occupations, society, and government.

4. The pupil may now study the geography of Michigan. Pursue the study in the order as above; draw and describe.

NOTE.—The pupil may continue to map out his county and to locate on it any objects referred to in the preceding lessons. The exercise in description should be continued.

IV.—*The formal or text book course.*

Proceeding by analysis, we first consider the earth's surface as a whole, then in its parts, each part being taken as a unit. For this work the following is the logical—

1. Order of study: (a) The outline: with adjacent islands, if any; (b) the surface: mountain systems, valleys, &c.; (c) inland waters: lakes, seas, and river systems; (d) climate; (e) vegetation; (f) animals; (g) inhabitants; (h) industries and occupations; (i) political geography; (j) history and government.

2. Method of study: (a) A study of the map by inspection (observation); (b) map drawing, to secure a closer and more careful study; (c) a careful reading, by topics, of descriptive matter in the text book and such other books and papers as can be procured; (d) written exercises, by question and by topic.

UNITED STATES HISTORY.

I.—*Objects to be obtained.*

1. Creation in pupils of a taste for the reading and study of history.

2. Information on the part of pupils as to books to be read and as to methods of reading and study.

3. Knowledge: (a) Which shall serve as a basis for future reading and study; (b) which shall render reading intelligible by enabling the pupil to understand historical references.

II.—*General plan of teaching.*

1. Select some topic for study.

2. Find out through the pupils what text books and other works on United States history are in the neighborhood and can be made available.

3. Read from the different books and converse with the class on the topic.

4. Teacher and pupils read in class stories, anecdotes, and biographical sketches from other books.

5. Stories and anecdotes bearing on the topic may be given orally by members of the class, but in all such cases "authorities" should be required of the pupils.

6. Reproduction by pupils, both orally and in writing, of the substance of what has been read or related.

7. Constant use of maps to fix locations. It is exceedingly desirable to keep before the class an outline map of North America, including the West Indies.

8. Reference to books of history and biography for subsequent reading.

9. Directions and suggestions as to future reading and study.

III.—*Topics for study.*

1. Aborigines: (*a*) Prehistoric; (*b*) Indians: color, size, occupation, dwellings, implements, weapons, money, language, picture writing, government, religion, ceremonies, &c.

2. Discoveries: (*a*) Northmen; (*b*) Columbus: theories, voyages; (*c*) the Cabots; (*d*) Vespucci.

3. Explorations: (*a*) Spanish, results: (1) Ponce de Leon; (2) Balboa; (3) De Soto. (*b*) French, results: (1) Verrazzani; (2) Cartier; (3) Champlain; (4) Jesuits; (5) Marquette; (6) La Salle. (*c*) English, results: (1) Drake; (2) Raleigh; (3) London Company; (4) Plymouth Company. (*d*) Dutch, Hudson, results.

4. Settlements and colonies: (*a*) Virginia: name, John Smith, charter. (*b*) Massachusetts: (1) Plymouth colony: settlement, religion; (2) Bay colony: religious troubles, Roger Williams, Quakers. (*c*) New Hampshire: early name. (*d*) Connecticut: charter. (*e*) Rhode Island: religious freedom. (*f*) New York: Dutch governors, English governors. (*g*) New Jersey. (*h*) Pennsylvania: William Penn, &c. (*i*) Delaware. (*k*) Maryland: name, Catholic and Protestant. (*l*) Carolinas: Huguenots. (*m*) Division of Carolinas. (*n*) Georgia: character of settlers.

5. Revolutionary war: (*a*) Condition of the colonies at origin; (*b*) causes; (*c*) political results.

6. United States civil and political history. (*a*) National: (1) Declaration of Independence; (2) Constitution, origin, amendments, &c.; (3) administrations in order; (4) political parties; (5) United States bank trouble; (6) admission of States; (7) reconstruction. (*b*) International: (1) Treaties: Indian, foreign; (2) Monroe doctrine, &c.

7. Slavery: Introduction, spread, agitation, Missouri compromise, fugitive slave law, Kansas-Nebraska bill, Dred Scott decision, John Brown, emancipation.

8. Growth and development: (*a*) Territory: (1) thirteen colonies and northwest and southwest territories; (2) Oregon and Louisiana; (3) Florida; (4) Texas; (5) California, &c.; Gadsden purchase; (6) Alaska. (*b*) Population: (1) At time of Revolution; (2) 1800, 1810, 1820, 1830, &c. (*c*) Agriculture, commerce, manufactures and the arts, literature, education, &c.

9. Wars: (*a*) Indian: Virginia, *King Philip*, Pequod, Pontiac, *Miamis*, Creek, Black Hawk, *Florida*, West, and Northwest; (*b*) foreign: King William's, Queen Anne's, King George's, *French and Indian*, *the Revolution*, Tripolitan, 1812, Algiers, *Mexican*; (*c*) civil: Bacon's rebellion, Clayborne's rebellion, Protestant and Catholic, whiskey insurrection, Dorr rebellion, anti-rent, Mormon, *secession*.

NOTE.—Causes, conduct, and result, according to the capacity of the school and the time at command. The most important wars are here indicated by italics.

IV.—*Chronological chart.*

From 1475 to date may be arranged somewhat after the style of Adams's historical chart. The heavy vertical lines should be so placed as to inclose what are ordinarily called the "epochs" of our history, with the name of each period written at the top; thus the whole subject will be presented to the eye, arranged by both the "topical" and "epoch" methods, according as we read from left to right or from top to bottom.

V.—*Books.*

1. To be read.
2. Reference.

NOTE.—To incite and facilitate future reading and study of United States history the teacher should see to it that the pupil has a list of the best books on the subject. The largest books are not always the best.

CIVIL GOVERNMENT.

I.—*Governments.*

1. Definition and object.
2. Kinds: (*a*) Patriarchal; (*b*) theocratic; (*c*) monarchical; (*d*) aristocratic; (*e*) democratic; (*f*) republican.
3. Political maxims.

II.—*Government of the United States.*

1. Periods: (*a*) Colonial; (*b*) under articles of confederation: insufficiency of; (*c*) under constitution: origin and preamble.
2. Branches: (*a*) Legislative, law making, Congress: (1) Senate: eligibility, number of members; (2) House of Representatives: eligibility, number of members. (*b*) Executive, law enforcing: (1) Election of President and Vice President; (2) powers and duties; (3) cabinet, how constituted, duties. (*c*) Judiciary, law interpreting: (1) courts: supreme, circuit, district; (2) judges.
3. Special constitutional provisions: (*a*) Prohibitions on United States: habeas corpus, ex post facto, &c.; (*b*) personal rights.

III.—*State governments as represented by Michigan.*

1. Relation to General Government: (*a*) Rights of States; (*b*) State prohibitions.
2. Branches of State government: (*a*) Legislative: branches, powers, number, members, eligibility, term. (*b*) Executive: State officers: powers and duties, term, eligibility. (*c*) Judiciary: (1) justice courts: jurisdiction, functions; (2) probate courts: jurisdiction, functions; (3) circuit courts: jurisdiction, officers; (4) supreme court: how constituted, where held.
3. County government.
4. Township government.
5. Municipal government.

IV.—*Territorial governments.*

1. Relation to General Government.
2. Differ from State governments.

PHYSIOLOGY.

I.—*General exercise.*

1. The why, or reason for calling the attention of teachers to the subject: (*a*) Importance of the subject; (*b*) value of health and physical development; (*c*) ignorance of hygienic laws; (*d*) the teacher's responsibility in the matter of his pupils' health.
2. Divisions of the subject and definitions: (*a*) Three divisions: anatomy, physiology, hygiene; (*b*) define these terms and show their relations to each other.
3. Health and disease: (*a*) definitions, relations to each other; (*b*) relations to personal habits and to external causes.

II.—*School hygiene.*

1. Location of school-house: (*a*) Should be accessibly placed; (*b*) necessity of good drainage, proper disposition of shade and sunlight, pleasant outlook.
2. School premises: (*a*) Examine them before opening school term; (*b*) insist upon cleansing, repairs, and supplies; (*c*) inspect often and arrange for care of outbuildings; (*d*) disinfectants: copperas, chloride of lime, road dust.

3. School room: (*a*) Heating, proper temperature; (*b*) ventilation: stove jacket, cold air duct, board under lower window sash; air currents, open doors and windows at recesses; (*c*) light: large, high windows, light entering from above and at the sides; the desks protected from direct sunlight; (*d*) furniture, comfortable, adapted to its purpose.

4. The pupils: (*a*) Posture: sitting and standing, lounging habits; (*b*) length of recitations, study hours; (*c*) sports on the playground, not too much interference, calisthenic exercises; (*d*) temperaments, disabilities; (*e*) contagious diseases, small pox and vaccination, scarlet fever, diphtheria, mumps, measles, whooping cough, &c.; (*f*) cleanliness and habits; (*g*) sudden illness and accidents: fainting fits, cuts, broken bones, snake bite, drowning.

III.—*Typical oral lessons.*

1. Respiration: (*a*) Anatomy of the respiratory organs: nostrils, trachea, bronchial tubes, lungs, air cells, diaphragm, intercostal and abdominal muscles; (*b*) physiology of respiration: how we breathe, air, pressure, and vacua; what we breath and why we breathe; animal heat, oxidation of waste matter, rate of breathing; (*c*) hygiene of respiration: good breathing, obstruction, constrained posture, tight clothing; air impurities, experiments with carbonic acid and candle.

2. The eye and vision: (*a*) Study the anatomy of the eye by means of a dissection, a model, or by blackboard drawing: the form, the muscles, coats, pupil, crystalline lens, humors, nerve; (*b*) study the physiology of the eye: refraction of light, effect of lenses, camera obscura, images, optic nerve, and vision; the adjustments of the eye, of the pupil, of the crystalline lens; nearsightedness explained; (*c*) the hygiene of the eye: rules for the proper use and care of the eye: (1) have sufficient light, twilight, firelight, &c.; (2) let the light fall upon the book or work; for writing, drawing, &c., it should fall over the left shoulder; (3) avoid stooping or uneasy posture; in reading the book should be held up before the eye; (4) the book should be held not less than twelve and not more than eighteen inches from the eye; nearsightedness; (5) avoid the angle of total refraction; (6) avoid small and bad prints; (7) don't read in a smoky or dusty atmosphere; (8) avoid reading while walking or driving; (9) don't overtax the eyes by too long use; (10) cleanse the eyes frequently with cool or tepid water; (11) try to protect your pupils against all accidents to the eyes.

NOTE 1.—In case but two exercises can be given, the first two are recommended. If but one can be given, the second is recommended.

NOTE 2.—If preferred, lessons similar to those in Exercise III can be given upon such topics as digestion, circulation, waste and repair, the nervous system, &c. The aim should be toward practical hygienic rules of living rather than theoretical or technical matters.

PENMANSHIP.

I.—*Materials and appliances.*

1. Best paper.
2. Fine and flexible steel pens.
3. The common steel spring and wood penholder.
4. Ink not injured by freezing.
5. Blotting paper and pen wiper.

NOTE.—Slates and pencils for beginners, or lead pencils.

II.—*Preliminary work.*

1. Correct position at the desk: one of two positions.
2. Position of the arm and the hand.
3. Position of the pencil or pen.

III.—*Method of teaching.*

1. Send the entire class to the blackboard in sections of three or four pupils at a time.
2. Begin with simple forms, parts before wholes, and secure prompt and uniform movement by counting.
3. Attend to the whole arm and the forearm movements, i. e., movements for making large and small forms or letters.
4. Remind pupils of their errors by a system of critical marks on the margin of their work.
5. Criticise frequently and kindly by showing errors and the ways to avoid them.

NOTE.—Insist on the best work, done with neatness, with taste, and in order.

OUTLINE OF A COURSE IN ELEMENTARY DRAWING.

I.—*Straight lines.*

1. Distinction between *vertical*, *horizontal*, and *oblique lines*.
2. Drill in drawing vertical, horizontal, and oblique lines.
3. Combinations of *two* straight lines: (*a*) Dictate combinations; (*b*) draw forms (flat) composed of; (*c*) group combinations by twos, fours, sixes, &c.; (*d*) draw preceding exercises from memory.
4. Combinations of *three* straight lines: (*a*) Dictate combinations; (*b*) draw forms bounded by; (*c*) group combinations by twos, fours, sixes, &c.; (*d*) draw any previous work from memory.
5. Distinction between *right*, *acute*, and *obtuse angles*.
6. Drill in drawing angles.
7. Combinations of *two* angles (*four* straight lines); or, combinations of *four* straight lines: (*a*) Dictate combinations; (*b*) draw forms bounded by, and name the lines and angles; (*c*) group combinations; (*d*) draw any preceding exercise from memory.
8. Distinction between *right-angled triangles*, *acute-angled triangles*, and *obtuse-angled triangles*.
9. Drill in drawing triangles.
10. Combinations of *two*, *four*, *six*, &c., triangles: (*a*) Dictate combinations: (*b*) draw forms involving, and name lines, angles, and triangles; (*c*) group combinations; (*d*) draw preceding exercises from memory.
11. Distinction between *square*, *oblong*, *rhomb*, *rhombus*, &c.
12. Drill in drawing square, oblong, &c.
13. Combinations of *squares*, *oblongs*, &c.: (*a*) Dictate combinations; (*b*) draw forms involving; (*c*) group combinations; (*d*) draw any preceding exercise from memory.

II.—*Curved lines.*

1. Teach what is meant by a *curved line*.
2. Drill in drawing curved lines.
3. Combinations of *two* curved lines: (*a*) Dictate combinations; (*b*) draw forms containing; (*c*) group combinations by twos, fours, sixes, &c.; (*d*) draw from memory.
4. Combinations of *three*, *four*, &c., curved lines, as above.

VOCAL MUSIC.

I.—*Reasons why vocal music should be taught in public schools.*

1. The influence which music has always exerted and its consequent almost universal use give it a prominence as a branch of education that demands more general attention.

2. Its study should be commenced in childhood, before the organs of hearing and vocalization become so fixed that musical sounds can neither be appreciated nor produced.

3. In a sanitary view singing is one of the best promoters of health.

4. Its good influence upon the morals and deportment of the young is incalculable.

5. The mental discipline acquired in learning the science gives it as high a position as any other study.

6. Music as a means of vocal culture is unequalled and greatly aids in making good readers and speakers.

7. In the light of economy the cost for tuition to the parent, in the way of private instruction, would be greatly lessened by having music taught in the public schools, while those who from poverty would otherwise never receive any musical training, would be greatly benefited.

II.—*How shall it be taught?*

1. By the regular teachers, *all of whom*, regardless of previous special preparation or natural talent, if so disposed, may obtain good results.

2. By devoting, as a change, and thus as a relief from other studies, a few minutes at various intervals, to the amount of fifteen or twenty minutes in each day.

3. By having exercises and songs placed upon the blackboard, to be copied by pupils as desired, and having the same practised until mastered.

III.—*General points to be observed by teachers.*

1. Position of the body: (*a*) Body erect, not leaning in any direction; (*b*) feet placed squarely upon the floor.

2. Exercises and songs within the compass of pupils' voices.

3. Singing at and in correct pitch: (*a*) Use a tuning fork, pitch pipe, organ, piano, or other instrument, to obtain the same.

4. Proper use of the voice: (*a*) Breathing so as to produce lung power; (*b*) position of the throat, tongue, and mouth; (*c*) singing softly and smoothly, to secure good quality of utterance.

5. Intelligent expression: (*a*) Distinct articulation; (*b*) correct sounds of vowels and consonants; (*c*) breathing at proper places; (*d*) proper movement and accentuation.

IV.—*Course of instruction.*

1. General arrangements: (*a*) School organized into classes according to ability of pupils; (*b*) each class to have special work suitable for it; (*c*) school to have exercises and songs within the ability of all; (*d*) entire school to be interested.

2. Younger classes: (*a*) Rote exercises and songs; (*b*) easy lessons in reading signs; (*c*) establish the relation between signs and tones; (*d*) exercises in keeping time; (*e*) exercises in notes in different keys, without theory; (*f*) other simple features, as occasion may require.

3. Older classes: (*a*) Exercises in songs in one, two, or more parts, to be learned by note; (*b*) writing music on slates and blackboard; (*c*) practical knowledge of (1) different kinds of measures, (2) usual kinds of notes and rests, (3) ordinary intervals in the scale, (4) easier accidentals, (5) different keys, (6) other features as needed.

Program for institutes, 1881–'82.

Hour.	Time.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
9.00 A. M	15 minutes.		Opening exercises.	Opening exercises.	Opening exercises.	Opening exercises.
9.15 A. M	40 minutes.		Primary reading.	Primary reading.	Advanced reading.	Advanced reading.
9.55 A. M	40 minutes.		Geography.	Geography.	United States history.	United States history.
10.35 A. M	15 minutes.		Recess.	Recess.	Recess.	Recess.
10.50 A. M	35 minutes.		Arithmetic.	Arithmetic.	Arithmetic.	Art of questioning.
11.25 A. M	35 minutes.		Language lessons.	Language lessons.	Language lessons.	Technical grammar.
2.00 P. M	35 minutes.	Organization.	Physiology.	Organization of district schools, I, II.	Organization of district schools, III.	School government.
2.35 P. M	35 minutes.	Opening work.	Vocal music.	Morals and manners.	Civil government.	Civil government.
3.10 P. M	15 minutes.	Recess.	Recess.	Recess.	Recess.	Recess.
3.25 P. M	35 minutes.	Elementary sounds.	Language lessons.	Language lessons.	Language lessons.	School law.
4.00 P. M	30 minutes.	Spelling.	Spelling.	Spelling.	Penmanship.	Query box.
8.00 P. M						

B.—INDIANA.

The Indiana program for county institute work in 1882 was preceded by suggestions to the managers and instructors. They were advised not to attempt too much work, but to confine their attention chiefly to imparting knowledge about the principles and practice of teaching, in ways adapted to the circumstances and requirements of teachers in rural schools; to show, for example, how some improved method may be adopted and used by the rural teacher, how to make school teaching systematic and progressive as well as simple, and similar topics.

SUGGESTIONS TO INSTITUTE MANAGERS AND INSTRUCTORS.

1. A common fault of institute management is the attempt to cover too much ground. It is not unusual for a five-day institute to give instruction in each of the eight legal branches, in theory and practice, and on several other topics. The instruction is general and superficial and the results very unsatisfactory.

The following outlines cover only half of this ground, the other half having been covered by the outlines prepared last year. The syllabuses in arithmetic, grammar, and reading include the more advanced courses of instruction. A more elementary course in these branches was outlined last year.

2. Each syllabus is the result of an attempt to present a mean between too meagre an outline and too much detail. The aim has been to indicate clearly the ground to be covered and the general character of the instruction needed. It is not expected that instructors will follow these outlines without modification. It is hoped, however, that they may make themselves familiar with each syllabus and embody the more important suggestions in the instruction imparted. When a syllabus is too full for the time allotted to the branch, the more important topics should be selected.

3. The chief object of an institute is to impart a knowledge of the principles and methods of teaching and school management. Its great aim is professional training. The schools must be depended upon to teach the several branches of study; the institute must show how to teach these branches. The school teaches pupils to divide one fraction by another; the institute shows teachers how to teach the division of fractions. Institute instruction should unfold the vital guiding principles of the teacher's art, and it should present and illustrate those methods which embody these principles in actual practice. Important subjects neglected in the schools and difficulties in subjects there taught may be incidentally elucidated and explained. Academic instruction should have a small place in an institute.

4. The instruction should be specially adapted to the circumstances and needs of country teachers. The methods of teaching presented in institutes are too often those used in the better class of graded schools in cities and towns, and they are discarded by most country teachers as impracticable in ungraded schools. What is needed is to adapt these improved methods to the country school, to show how they may be used. It is not enough to tell country teachers that the method presented must be modified to suit their circumstances. The making of this modification requires a degree of invention, experience, and skill which teachers as a class do not possess. It is at this point that they specially need the assistance of an experienced guide. Institute instruction should be given largely from the standpoint of the country teacher.

5. Great pains should be taken to make the instruction systematic and simple. Every lesson should have a plan, and this should be outlined on the blackboard and copied by the teachers in their note books. The important points should be reviewed by questioning the institute. Abstract and technical terms should be used sparingly, and when used their meaning should be made plain. Methods should be presented

concretely, and, as far as practicable, illustrated by brief class exercises. There should, however, be no attempt to make the teacher's institute a "model school." The essential conditions are wanting. Class drills can be instituted to a limited extent to illustrate methods.

6. The error of employing too many instructors should be avoided. The objection to too many instructors is the want of system and unity in their instruction. No system of teaching can be developed when the instructor has not time to prepare a systematic course of instruction. Two regular day instructors, with a teacher of some specialty (as drawing, music, or writing), make an efficient corps. These instructors should be selected for their known competency, and not because they have other interests to subserve and can afford to assist without compensation. The institute should not be made a bulletin board.

7. The time table recommended leaves several hours to be filled by the institute manager. Every county has its special needs, which should receive attention. Some time must be devoted to business, and the "query box" and other exercises may be made interesting and profitable. One or more lessons in music can be given at each institute.

8. The evenings may properly be devoted to such exercises as will interest and instruct the people. The teacher should be lost in the citizen, and education should be considered in its wider and more popular aspects. Scientific and even literary lectures may have a place, and the exercises may be varied with music, readings, &c. But while these evening exercises should be made attractive and entertaining, it should be constantly kept in view that entertainment is not the end of the evening session. The great object is to impart better views of education and to create a livelier public interest and a heartier coöperation in the work of school improvement. What is needed to make education universal is to create a universal appreciation of its value. This requires continued discussion and agitation.

TIME TABLE FOR COUNTY INSTITUTE, 1882.

Hour.	Time.	Monday.	Tuesday and Wednesday.	Thursday.	Friday.
9.00..	15 min.	....	Opening exercises ..	Opening exercises ..	Opening exercises.
9.15..	45 min.	....	Grammar	Grammar	Grammar.
10.00..	40 min.	Organization of institute.	Reading	Reading	Reading.
10.40..	10 min.		Recess	Recess	Recess.
10.50..	40 min	Arithmetic	Arithmetic	Arithmetic	Arithmetic.
11.30..	30 min.	Lecture *a*...........	Drawing.........	Drawing............	(*b*)
12.00..	90 min.	....	....	....	....
1.30..	45 min.	Geography	Geography	Geography	Geography.
2.15..	45 min.	Pedagogics	Pedagogics	Pedagogics	Pedagogics.
3.00..	15 min.	Recess..............	Recess..............	Recess..............	Recess.
3.15..	45 min	History	History..............	Civil government...	Civil government.
4.00..	30 min.	(*b*)	(*b*)	(*b*)	(*b*)

a By county superintendent or institute instructor on the object and work of the institute.
b Exercise to be determined by the superintendent.

ENGLISH GRAMMAR.

LESSON I.

1. Common errors in teaching grammar:
(*a*) Commencing the study too soon.
(*b*) Depending upon this study for the formation of correct habits of speech.
(*c*) The study of analysis before parsing.

REMARKS.—The proper order of study is: (1) The parts of speech briefly taught; (2) the simple sentence; (3) further study of the parts of speech and parsing carried on in connection with the analysis of the simple sentence; (4) more extended analysis, introducing the compound and the complex sentence and more difficult exercises in parsing.

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(*d*) Resting all distinctions in the use of words upon authority only.

(*e*) Proceeding too rapidly. Each new usage discovered should be made familiar before another is introduced. Illustration: Do not introduce the complex sentence until after the study of the simple sentence has occupied several months of time and is quite thoroughly mastered.

(*f*) Omitting exercises in synthesis. Synthesis before parsing. Pupils should usually parse or analyze sentences of their construction.

(*g*) Omitting punctuation.

(*h*) Neglecting the study of the phrase and clause elements of the sentence.

(*i*) Employing the oral form of recitation instead of combining oral and written work.

2. How to make a first study of the parts of speech:

Remarks.—Pupils should be taught to recognize the parts of speech with considerable readiness before formal definitions or minute directions are assigned them for study. The best order for this instruction is noun, adjective, verb, pronoun, adverb, conjunction, preposition, interjection. An outline lesson on the noun and one on the verb are given to illustrate a method for this instruction. A text book in grammar in the hands of the pupils will be an obstacle at this point in this work.

The noun.

(*a*) Call upon the class for names of objects. Write these on the blackboard.

(*b*) Teach that these name words are called nouns.

(*c*) Have pupils bring lists of nouns to class; hunt for nouns in their text books.

(*d*) Taking the nouns selected by the pupils arrange them in two classes, common and proper, and lead the pupils to discover and express the differences between the two classes. When this is clearly done, give the terms proper and common to be used.

(*e*) Similarly teach number and gender, leaving person and case to be studied later.

The verb.

(*a*) Writing on the blackboard the word dog, ask what a dog does when he sees a rabbit. Write the appropriate verb at the right of the word dog. Similarly obtain other verbs. Using other nouns, repeat the process and obtain more verbs to be similarly written and underscored.

(*b*) Lead the class to notice that all these words underscored denote action.

(*c*) Give the name *verb* to words of this class.

(*d*) Similarly, introduce verbs denoting being or state.

(*e*) The sentence should now be taught by methods similar to the above; and later, the modifications of the verb.

LESSON II.

Designed to indicate a second study of the noun.

The noun.

1. Derivation of the term.
2. Modifications: (*a*) Class, (*b*) person, (*c*) number, (*d*) gender, (*e*) case.
3. Uses: (*a*) Subject of a verb, (*b*) possessive, (*c*) object of transitive verb, (*d*) object of preposition, (*e*) indirect object of a verb, (*f*) apposition, (*g*) predicate nominative, (*h*) independent, (*i*) objective adverbial.
4. The limitations as to person, gender, and case of the noun in each of the above-named uses.
5. Model for parsing the noun.

LESSON III.

The verb.

1. Signification of the term.
2. Kinds.
3. Properties: (*a*) Voice, (*b*) mood, (*c*) tense, (*d*) number, (*e*) person.
4. Conjugation.

5. Agreement with subject.
6. Modifications: (*a*) By word, adverb, noun; (*b*) by phrase; (*c*) by clause.
7. The infinitive.
8. The participle.
9. Models of parsing.

For those who prefer a more extended outline, the following treatment of the infinitive is given as an example. This might constitute the third lesson instead of the preceding lesson on the verb:

The infinitive.

1. Definition.
2. Uses: (*a*) As a noun: (1) Subject, (2) predicate, (3) direct object, (4) indirect object, (5) object of preposition, (6) apposition modified; (*b*) as an adjective; (*c*) as a verb.
1. Subject.
2. Modifier: (*a*) Noun, (*b*) adjective, (*c*) adverb, (*d*) as an adverb.
3. Errors in use of the infinitive.
4. Models for parsing.

An illustration of each of the above statements should be given and many similar examples constructed by the class.

LESSON IV.

The sentence.

1. Classes according to thought expressed; punctuation.
2. Classes as to form: (1) Simple: (*a*) Definition, (*b*) elements: (1) Subject, (2) copula, (3) predicate: (a) May be what? (b) how modified? (2) Compound: (*a*) Definition; (*b*) classes: (1) regular, (2) abridged; (*c*) connection of clauses; (*d*) punctuation. (3) Complex: (*a*) Definition; (*b*) classes: (1) regular, (2) abridged; (*c*) clauses used: (1) Principal, (2) subordinate: (a) Adjective, (b) adverbial, (c) substantive; (*d*) connection of clauses; (*e*) punctuation.
3. Order of analysis.
4. Forms for diagrams.

READING.

LESSON I.

Silent reading.

I. The immediate end or purpose of silent reading is to understand and appreciate the thoughts and feeling expressed in written language.

II. The means necessary to this end are —

(1) A knowledge of the words used: their derivation, composition, and meaning.

(2) A knowledge of the figures of speech, including their interpretation.

(3) A clear comprehension of the thought in each sentence.

(4) A knowledge of the facts and events related to the selection, historical, biographical, geographical, literary, &c.: (*a*) The importance of this knowledge shown by such examples as Tennyson's "Charge of the Light Brigade," Coleridge's "Ode to Mont Blanc," Mrs. Hemans's "Landing of the Pilgrims," &c. (*b*) This related knowledge not necessarily exhaustive or minute, but sufficient to beget interest and appreciation.

(5) An appreciation of the literary excellence of the selection read, and this involves a taste for what is beautiful and ennobling in literature.

LESSON II.

Oral reading.

I. The chief purpose or end of oral reading is the correct utterance of the thought and emotion expressed in the selection read: (*a*) When the thought is the chief element expressed, called *didactic* reading; (*b*) when the feeling or emotion is prominent, called *emotional* reading; (*c*) in reading, the emotion is not as fully expressed as in acting or speaking; it is suggested rather than expressed.

II. Oral reading includes:

(1) Pronunciation of the words: (*a*) The elementary sounds: vocals, subvocals, and aspirates; (*b*) their articulation: (1) in accented syllables; (2) in unaccented syllables.

2. Emphasis: (*a*) Its purpose; (*b*) placed on words, phrases, or sentences; (*c*) by any unusual modulation: (1) loud or subdued force; (2) the prolonging of vocals; (3) pauses before the emphatic words, &c.

3. Inflections: (*a*) Kinds: (1) rising, (2) falling, (3) circumflex; (*b*) dependent on emphasis, rules of little value; (*c*) inflection marks often misleading; their use in illustrative sentences.

4. Modulation: (*a*) Pitch: (1) high, (2) medium, (3) low; (*b*) force: (1) loud, (2) moderate, (3) gentle; (*c*) quality: (1) pure tone, (2) orotund, (3) aspirated, (4) guttural, (5) trembling; (*d*) rate: (1) quick or fast, (2) moderate, (3) slow; (*e*) pauses not determined by punctuation marks.

N. B.—The above analysis of oral reading is not designed to be complete, but to indicate those elements which should receive attention in a reading drill. This lesson is designed to be preparatory to those succeeding.

LESSON III.

Class drill in reading.

I. Oral reading as an art is not taught by rules or lectures, but by drills. These drills must include —

1. Exercises designed to develop the thought and awaken the emotion to be expressed, including: (*a*) The study of new words: their meaning and use; (*b*) the study of the figures of speech; (*c*) the analysis of the thought; (*d*) instruction on related knowledge; (*e*) instruction respecting the author, his writings, &c.

2. Exercises in the oral expression of the thought and feeling, including: (*a*) Pronunciation, articulation, accent, &c.; (*b*) emphasis, how determined; (*c*) inflection; (*d*) modulation.

3. The drills should unite the two series of exercises above described, the first being usually made preparatory to the second: (*a*) the thought must be grasped and the emotion felt before either can be expressed with the voice; (*b*) the pupil's interest in and appreciation of the selection to be read must be awakened by questions, illustrations, &c.; (*c*) question and drill must go hand in hand; the one develops the thought and kindles the feeling; the other gives them proper utterance.

N. B.—It is not meant that a given drill in reading will include all of these exercises, but a series of drills should cover this ground.

LESSON IV.

An illustrative drill.

I. Give a practical illustration of the previous lesson by a class exercise. The class may be composed of members of the institute.

Such a paragraph as the following, selected from "The Thunder Storm," by George D. Prentice, will afford material for an hour's instruction and drill:

> I never was a man of feeble courage. There are few scenes of human or elemental strife on which I have not looked with a brow of daring. I have stood in the front of the battle when swords were circling and gleaming round me like fiery serpents in the air. I have seen these things with a swelling soul that knew not, that recked not danger. But there is something in the thunder's voice that makes me tremble like a child.

1. Take the first sentence: (*a*) Ask such questions as will clearly bring out the thought; (*b*) let it then be read; drill until the thought is properly expressed.

2. Take the second sentence: (*a*) Ask questions to bring out the thought; (*b*) teach

the meaning of "scenes," "strife," "human," "elemental;" (c) ask for examples of human strife, of elemental strife; (d) teach the figure "with a brow of daring;" have the same idea expressed in simple language; (e) drill on the reading of the sentence, securing right emphasis, modulation, &c.

3. In like manner teach each of the succeeding sentences, specially noticing and expressing the change of feeling in the last sentence.

4. Let the entire paragraph be read by several members of the class.

ARITHMETIC.

LESSON I.

Denominate numbers.

How to teach:

1. The ideas of length, volume, and weight: (a) By causing the pupils to measure distances until they are able to determine by inspection short distances in feet or inches and greater distances in yards or rods; (b) by familiarizing the pupil with the principal measures used in measuring volume: (1) testing the volume of a quart measure by the pint measure; the peck by the quart, &c.; (2) testing the volume of the gallon by the pint measure, &c.; (c) by familiarizing the pupil with the ounce and the pound weight, by weighing objects until by inspection the pupil can determine the weight of light bodies.

NOTE 1.—The same general process to be followed in teaching circular measure.

NOTE 2.—In teaching the metric system the measures of length, weight, and volume should be presented to the class.

2. Reduction: (a) To lower denominations; (b) to higher denominations; (c) compare the reduction of the different orders of simple numbers with the reduction of denominate numbers: (1) Show in what they agree; (2) show how they differ.

3. Show in what respect the processes of adding, subtracting, multiplying, and dividing simple numbers differ from the processes of adding, subtracting, multiplying, and dividing denominate numbers.

4. Analysis used in denominate numbers: (a) The object: (1) to assist the pupil to understand the reason for the method; (2) to enable the pupil to explain his work in a logical order and manner; (3) to compel the pupil to think and not to work by rule. (b) How abused: (1) when the form of the analysis is made the chief end to be attained; (2) when the analysis is not used chiefly to cause the pupil to think for himself

5. Neatness of work: (a) Why important; (b) how obtained; (c) why work should be logically arranged.

LESSON II.

Percentage.

1. Order of developing the subject: (a) When to teach (1) the process, (2) the analysis of the subject, (3) the definition of terms, (4) the relation of the terms base, rate, amount, &c., to each other.

2. The elements or terms to be considered in percentage: (a) The base and the per cent. the base is of itself; the amount and the per cent. the amount is of the base; the difference and the per cent. the difference is of the base; the percentage and the per cent. the percentage is of the base, called rate per cent. (b) How the above (a) may be changed so as to form equations. (c) The number of terms which is possible in any problem. (d) The number of terms which must be given in order to solve a problem in percentage. (e) Show on what basis percentage may be divided into four cases; on what into five; on what into seven. (f) Show why the base in every problem is 100 per cent. of itself. (g) Show that the amount, difference, and percentage are dependent upon the base.

3. Give method of solution: (*a*) Process; (*b*) analysis of process; (*c*) state when a second process should be introduced.

4. Difficulties which meet the pupil in the study of percentage: (*a*) Failure to comprehend: (1) The definition of the terms; (2) the relation of the terms to the base and to each other; (3) that the base is always 100 per cent. (*b*) Want of a thorough knowledge of decimal fractions, showing: (1) Inability to express the rate in its several forms; (2) in pointing off the product or quotient. (*c*) Inability to determine from reading a problem: (1) What terms are given; (2) what terms are required. (*d*) The attempt to work all problems by rule, disregarding the principles which underlie the rule.

5. When the teacher becomes responsible for the faults mentioned in 4 above.

LESSON III.

Applications of percentage.

Subjects treated: Insurance, commission, stock, and profit and loss.

1. Terms used; their definition.

2. Compare the terms used in the above subjects with the terms used in Lesson II, i. e., determine which is base, amount, difference, percentage, rate, &c.

3. Give method of solution.

4. How to make the study of the above subjects a constant review of the principles in Lesson II: (*a*) By requiring pupils to state what is base, what amount, &c., in the solution of each problem; (*b*) by requiring pupils to reconstruct orally or in writing the given problem, so that each of the possible parts or terms in that problem may be asked for.

5. Pupils soon forget or have confused ideas of the terms used in the above subjects, because their use is outside of their experience in life; how remedied: (1) By requiring pupils to examine and familiarize themselves with the forms of insurance policies, bonds, shares of stock, &c; (2) by the formation of original problems.

6. Faults to be avoided by teachers: (*a*) Passing over subjects too hastily and hence (1) too much teaching, (2) too little study; (*b*) attempting to teach beginners a different process before the first process is fully mastered; (*c*) by making "getting answers" more important than the mastery of the principles upon which the process is based.

NOTE.—Of the four subjects treated in this lesson one will be sufficient for one exercise hence the instructor should select the subject.

LESSON IV.

Simple interest.

1. Definitions of terms used; why so named.

2. Show in what respect interest differs from each of the preceding applications of percentage.

3. Show relation of terms used to the terms used in Lesson II.

4. Give method of solution when the base, rate, and time are given: (*a*) Why the analysis of the process should be taught; (*b*) show when a second process should be introduced; (*c*) show that the different processes used in computing interest result from a change in the order of multiplying the factors.

5. Given, $B \times R \times T = \text{Interest}$

(*a*) Derive: (1) $B = \frac{I}{R \times T}$ (2) $R = \frac{I}{B \times T}$ (3) $T = \frac{I}{B \times R}$

(*b*) Show that (1) $A = B(1 + R \times T)$. (2) $B = \frac{A}{1 + R \times T}$

(*c*) The value of formulas.

6. Writing of promissory notes: (*a*) The essential facts to be stated in every note; (*b*) the form of negotiable and non-negotiable notes: (1) In what they agree, (2) in what they differ: (*c*) the form of a note payable at bank; (*d*) the form of a receipt; (*e*) show importance of teaching *a*, *b*, *c*, *d*.

LESSON V.

How to teach discount.

(1) Commercial discount: (*a*) Give method of solution; (*b*) analysis of process; (*c*) relation of the terms proceeds, discount, &c., to the terms used in percentage; (*d*) compare commercial discount with simple interest: (1) show similarity, (2) show difference; (*e*) compare commercial discount with subjects discussed in Lesson III.

2. Bank discount: (*a*) Definition of terms used; (*b*) give method of solution; (*c*) give analysis of process; (*d*) relation of terms used to the terms used in Lesson II; (*e*) show when the face of the note is base, when the proceeds is the difference; (*f*) relation of bank discount to simple interest: (1) show similarity, (2) show difference; (*g*) show how bank discount is computed upon notes bearing interest; (*h*) relation of bank discount to commercial discount: (1) show similarity, (a) in principle, (b) in application; (2) show differences, (a) in principle, (b) in application.

3. True discount, or discount: (*a*) Definition of terms used; (*b*) give method of solution; (*c*) analysis of process; (*d*) relation of terms used to the terms used in Lesson II; (*e*) show that the present worth is the base, that the face of the note is the amount; (*f*) relation of simple interest on the present worth of a note to the true discount of the note; (*g*) compare discount and simple interest: (1) show similarity, (a) in principle, (b) in application; (2) show differences, (a) in principle, (b) in application; (*h*) compare discount with commercial discount: (1) show similarity, (2) show differences; (*i*) compare discount with bank discount: (1) show similarity, (a) in principle, (b) in application; (2) show differences, (a) in principle, (b) in application; (*j*) show the relative importance of discount, commercial discount, and bank discount.

DRAWING.

I.—*What preparation is needed on the part of the teachers.*

1. If possible, a systematic course of instruction in drawing with reference to teaching it in the public schools.

2. If this is not practicable, experience has shown that a progressive teacher, with the assistance of the best elementary works now published, may succeed beyond all expectations.

II.—*How to arrange classes.*

1. In graded schools, all the pupils in the same room should be one class, or, at most, in two classes.

2. In ungraded schools (where drawing has never been taught) all may begin with the same exercises, the older pupils using pencils and paper, instead of slates. In a short time it may be advisable to form two divisions, or at most three, all drawing at the same time.

3. If nothing better, as to time, can be done, let drawing alternate with writing: drawing twice a week and writing three times per week.

III.—*Objects to be aimed at.*

1. To teach pupils to see.

2. To give skill of hand to represent what they see.

3. To teach form: first, regular or geometrical; second, irregular or natural.

4. To teach the facts, not the proofs, of geometry, so far as time permits.

5. The ultimate end should be to give the pupil a new language the elements of which are lines.

IV.—*Mistakes to be avoided.*

1. Avoid all temptations to make pretty pictures.

2. Avoid all thoughtless copying of any kind.

3. Avoid harsh criticism or impatience at the mistakes of pupils. Look for something to praise rather than for something to condemn.

4. If the benefits of drawing are likely to be misunderstood, do not begin a course

of lessons by a public announcement that *drawing* is to be taught. Call the work *slate exercises* until the pupils are interested.

V.—*How it should be taught.*

1. From the blackboard. Lessons on direction; lines and the division of them; forms, and all terms necessary to be taught and their application.

2. From copy. The exercise to be drawn is placed before the pupil on the board or on a card or in a book, and he is required to analyze it and draw it.

3. From memory. The pupil is required to draw from memory some figure learned previously.

4. From dictation. The pupil draws line by line what the teacher dictates, and thus translates words into lines and forms.

5. From objects. The pupil gets from actual things the ideas that he represents by lines and forms.

6. By lessons in invention and design. Forms previously learned are modified, combined, or rearranged to express a new or different thought.

LESSON I.

Illustrative drawing lessons.

Terms.—Up, down, right, left, upper right, upper left, &c.; bisect, trisect, intersect, &c.; diameter, diagonal, semidiameter, &c.

Lines.—Vertical, horizontal, oblique, parallel, perpendicular, straight, curved, light, medium, heavy, sketched, strengthened, finished.

Angles.—Right, acute, obtuse.

Figures.—Triangles, square, oblong, rhombus, pentagon, polygons, &c.

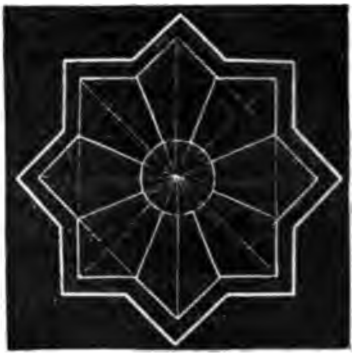
Dictation.—Sketch a square. Bisect its sides. Sketch the diameters. Trisect the semidiameters. Through the inner points of division sketch a circle. From every outer point of division sketch lines to the two nearest corners of the square. Finish the lines of the square, the circle, the oblique lines, and the middle division of the semidiameters.

LESSON II.

Dictation.—Sketch a square. Sketch the diagonals. Bisect the sides. Sketch the diameters. Mark off on every semidiagonal a distance from the centre equal to a semidiameter. Through these points and the ends of the diameters sketch a circle. Bisect the semidiameters of the circle. Through these points of division sketch a circle. Finish the lines of the square, the circles, and all lines between the circles.

LESSON III.

This figure may be drawn on the board, to be analyzed and copied, or it may be drawn from the following dictation:



Draw a vertical line. Bisect it. At the point of division draw a horizontal line equal to the vertical, one-half on each side. Connect the ends of these lines to form a square. Bisect the sides of the square. Draw the diameters. Extend the diameters each way until they equal the diagonals. Connect the ends of these lines to form another square. Draw lines from the points where the sides of the two squares intersect one another to the center. Trisect these lines. Draw a circle through the inner points of division. Outline the corners of the squares. Finish the lines of the circle, the corners of the squares, the outline of the corners, and so much of the lines that were trisected as lie without the circles.

Any one of the figures given in previous lessons may be drawn from memory.

GEOGRAPHY.

LESSON I.

Knowledge important to the pupil before studying geography from a text book:

1. Ideas of position: (*a*) Points of the compass; (*b*) direction of objects from a given object; (*c*) direction of distant objects from each other.

2. Ideas of distance: (*a*) Obtained by measuring; (*b*) how to give a child an idea of a mile; (*c*) how to teach pupils to determine distances by the eye: (1) in inches, feet, yards, &c.; (2) how the difficulty in determining, by the eye, equal horizontal and vertical distances may be overcome.

3. Forms of surface: (*a*) Square, triangle, rectangle; (*b*) curved surfaces, of a cylinder, globe, &c.

4. Ideas of a map: (*a*) Points of compass upon the map; (*b*) how position of objects is represented; (*c*) how the distance between objects is represented upon the map; (*d*) the first map that should be taught.

5. Difference between teaching pupils in country and city schools the above topics: (1) What the country pupil will already know; (2) what the city pupil.

LESSON II.

1. The use of the globe in teaching: (*a*) Relation of the parts of the earth's surface, including continents, seas, oceans, &c.; (*b*) form and relative size of continents; (*c*) the definition of circle, equator, zone, &c.; (*d*) how the latitude and longitude of places are determined: (1) from what measured, (2) how measured; (*e*) how to determine direction between places upon the globe; what determines east and west and north and south.

2. How to teach the latitude and longitude of places: (*a*) By fixing in the mind the latitude and longitude of a few places; (*b*) others to be determined by knowing their relation to the known places. Illustrations: (*a*) New Orleans latitude 30°, Chicago latitude 42°; what is the latitude of Memphis? (*b*) Washington longitude 77°, San Francisco longitude 122°; what is the longitude of Central Kansas?

3. Map drawing: (*a*) Its importance in teaching geography: (1) in fixing in mind the location of places; (2) in giving better ideas of the maps in the book; (3) its use in teaching history; (*b*) how abused: (1) when used simply as an exercise in drawing; (2) when made the chief end and not the means of teaching geography.

LESSON III.

Common errors to be avoided in studying and teaching geography.

1. Memorizing the text book as a means of learning the science.

2. Treating all the matter in a text book as of equal importance.

3. Giving too much time to things of little importance to the pupil, as requiring them to commit to memory the names and location: (*a*) Of all the counties in Indiana; (*b*) of the county seats; (*c*) of unimportant towns in other States or foreign countries; (*d*) of unimportant islands, capes, rivers, mountain ranges, &c.

4. Failure to give due attention to those places and things which are important: (*a*) Great commercial or manufacturing centres; (*b*) places of historical importance; (*c*) rivers valuable to commerce; (*d*) mountain ranges which by their position modify

the climate of countries, &c.; (*e*) relation of continents, oceans, gulfs, and islands which produce ocean currents.

5. Failure to recognize the science which underlies the facts of geography: (*a*) By teaching facts only, and these without their relations to each other; (*b*) by teaching the facts of geography without any definite end in view.

LESSON IV.

Mathematical geography.

Show how to teach the matter suggested below by means of the globe and such simple apparatus as each teacher may procure.

1. Relation of the earth to other planets: (*a*) Relative size; (*b*) relative distance from the sun; (*c*) shape of orbit: (1) the meaning of plane of the earth's orbit; (2) how illustrated.

2. Position of the earth's axis as related to the plane of the orbit: (*a*) Causes which determine: (1) position of the tropics; (2) position of the polar circles; (*b*) show that changes of seasons are dependent upon the angle which the axis of the earth makes with the plane of the earth's orbit.

3. Suppose the earth's axis to form a right angle with the plane of its orbit, state: (*a*) How this relation of the earth's axis affects the position of the tropics and polar circles; (*b*) the character of the climate in Indiana; the length of days: (*a*) in summer, (*b*) in winter.

4. Suppose the earth's axis were inclined to the plane of its orbit at an angle of 45°: (*a*) Locate the tropics; (*b*) locate the polar circles; (*c*) name and give the width of the zones formed; (*d*) describe the character of the climate in Indiana; the length of days (*a*) in summer, (*b*) in winter.

5. Suppose the earth's axis to lie in the plane of its orbit, and state (*a*) Why there would be neither tropics nor polar circles; (*b*) on what parts of the earth the sun's rays, at some time during the year, would be vertical; (*c*) the character of the climate in Indiana.

6. Show how a thorough knowledge of the subject matter involved in 1 to 5, inclusive, would assist the teacher in teaching geography (*a*) in primary grades; (*b*) in intermediate grades; (*c*) in advanced grades.

LESSON V.

1. How to teach relief: (*a*) Of continents: (1) plains, low, high; (2) plateaus; (3) a mountain, a range, a system; (*b*) of ocean beds: (1) low plains (in deepest parts); (2) high plains or plateaus (in shallow places); (3) islands, the tops of mountains or very high plateaus in the ocean bed; (*c*) contrast the form of ocean beds with the surface of continents: (1) distance from the top of the highest mountain on the continent to the lowest ocean bed; (2) form of surface, supposing the water all removed.

2. How to teach drainage: (*a*) State what determines the position of oceans and seas; (*b*) state what determines the direction of rivers and river systems; (*c*) relation between the drainage of a country and its relief; (*d*) how river systems as represented upon maps indicate the general relief of a country; (*e*) how mountain ranges, systems, and plateaus, as represented upon maps, indicate (1) general direction of the drainage, (2) the position and direction of rivers and river systems.

PEDAGOGICS.

LESSON I.

The teacher's preparation.

The teacher's preparation for giving a lesson or conducting a recitation includes—

1. A familiar acquaintance with the subject matter: (*a*) His knowledge should be

accurate, clear, and comprehensive; (*b*) it should be fresh, the result of recent study; daily study necessary; (*c*) it should be systematic, logically arranged and clear in mind.

2. A familiar acquaintance with the text book studied by the pupils: (*a*) The teacher should know the author's treatment of each subject; (*b*) the use of a text book in conducting a recitation: when such use is admissible; when not admissible; (*c*) the use of printed questions in text books: (1) not to be used by the teacher in the recitation, but to be studied as models; (2) to be used by the pupil in study; how?

3. A definite method of giving the lesson or conducting the recitation: (*a*) The better the method the better the result; (*b*) what a good method includes.

4. The proper assignment of the work or study of the pupil. Three things to be considered: (*a*) The capacity and advancement of the pupils; (*b*) the time available for work or study; (*c*) the nature of the task or lesson: (1) too much writing should not be required of little children—a serious error in many schools; (2) the task or lesson should be neither too long nor too short.

5. Advantages of a faithful daily preparation for teaching: (*a*) It lessens the burden of government; (*b*) it reduces the fret and worry of teaching; (*c*) it keeps the mind fresh and vigorous; (*d*) it begets enthusiasm; (*e*) it promotes health.

LESSON II.

Methods of instruction.

1. The ends or objects of the class exercises in our schools: (1) To impart knowledge, directly or indirectly; to instruct; (2) to impart skill of mind or bodily organs; to drill; (3) to test the pupil's knowledge and skill; to test.

2. Class exercises are of two kinds: (1) When the chief end or object of an exercise is to impart knowledge or skill, or both, the exercise properly called a lesson; (2) when the chief end or object is to test the pupil's knowledge or skill, or both, the exercise properly called a recitation: (*a*) these terms variously used by teachers, the term recitation being applied indiscriminately to all class exercises; (*b*) the term lesson often applied to exercises in reading, language, writing, drawing, vocal music, &c., when the chief object is instruction and drill; (*c*) most of the exercises in primary classes are lessons; in advanced classes, more of the exercises are recitations.

3. The lesson and the recitation compared: (1) The objects of the recitation in the order of importance are: (*a*) To test the pupil's knowledge and skill, the test to be searching and thorough, a test of knowledge and not of verbal memory merely; (*b*) to drill; (*c*) to instruct, instruction being incidental; (2) the objects of the lesson in the order of importance: (*a*) to instruct; (*b*) to drill; (*c*) to test, testing being incidental.

4. The relation of the lesson to the recitation: (1) The oral lesson *preparatory* to the pupil's study and to the recitation proper. *Instruction before study*: (*a*) In primary classes every subject to be first developed orally; (*b*) in more advanced classes less preparatory instruction required; pupils to be trained to obtain knowledge from books; (*c*) the lesson and the recitation in advanced classes may often be combined, one being made subordinate to the other.

5. Two methods of oral instruction: (1) The indirect, or Socratic, method, by questions, occasioning and directing observation and thought; (2) the direct method, the communication of knowledge by words, illustrations, &c.: (*a*) When the indirect method cannot be used; in teaching history, for example. (*b*) In higher schools direct instruction often takes the form of lectures.

LESSON III.

Methods of conducting recitations.

1. The two methods of conducting recitations are (1) The catechetic method; (2) the topic method.

1. The merits or advantages of the catechetic or question method thoroughness as a test: (1) questions should be clear, concise, definite or suggesting questions should be avoided; also, questions admitting " as answers; (b) it permits a logical unfolding of the subject; (c) it p parting of incidental instruction.

2. The disadvantages of the method: (a) It is not a good drill in tl thought consecutively; (b) it does not necessitate the logical analy and the systematic arrangement of its parts by the pupil.

II. The merits or advantages of the topic method are: (a) It culti the pupil required to tell what he knows in consecutive sentences; logical analysis of the subject and the systematic arrangements of i ciples by the pupil in study; (c) an excellent preparation for writin

1. The method superficial as a test when not directed by a thorough teacher; mere talking too often accepted for reciting.

III. The union of the two methods:

1. The lessons prepared and recited, in the main, on the topic p

2. Imperfect statements or other evidence of imperfect kno searching questions.

LESSON IV.

Methods of calling on pupils.

1. The three common methods of calling on pupils to recite, cal tive method; (2) the promiscuous method; (3) the simultaneou

2. The advantages of the consecutive or "turn" method ar time lost in designating the pupil to recite; (2) it is easy for th all of the pupils an opportunity to recite.

3. The disadvantages of the method: (1) It fails to necessit attention; (2) it often permits a partial preparation of the l may be avoided); (3) it prevents the most thorough testing of distributed in the most effective manner).

4. The advantages of the promiscuous method are: (1) It attention of the entire class (this secured by announcing designating the pupil to recite); (2) it necessitates the prepa by each pupil; (3) it permits the most effective distributi result of the foregoing, the recitation is made a thoroug gymnastic.

5. The disadvantages of the method are: (1) It is less ra (2) it is not as easy for the teacher; (3) the pupils have n reciting, pupils often omitted (how this may be avoided; *permits* an improper distribution of the tests.

6. How the consecutive and promiscuous methods ma (a) The pupils recite by turn except when the teacher de exceptions frequent; (b) illustrate by an exercise in spell

7. The use of the promiscuous or concert method: (1) when it may be used.

LESSON V.

Reviews and examinations.

1. The objects of reviews: (a) To test the results of p (b) to fix in the mind important facts and principles pa

2. Two kinds of reviews: (a) Periodical, as daily, we (b) topical, a review of a given subject or of a sectio completed.

3. Methods of reviews: (a) By oral questions in th questions, to be answered in writing; (c) by topics, as

also in the recitation; (*d*) by outlines, presenting an analysis of the subject; (*e*) reviews are examinations, but are less formal than the examination proper.

1. The objects of school examinations: (*a*) To test the pupil's knowledge and skill and compare the result with some standard: (1) To afford a basis for the classification and promotion of pupils; (2) to give the pupil a correct idea of his attainments; to indicate what he knows and what he ought to know; (3) to afford the teacher a tangible means of measuring his own success. (*b*) To furnish an incentive to both teacher and pupil to do faithful work: (1) Abused when pupils are stimulated to study for the purpose of obtaining a high result; (2) abused when results are used to *compare* pupils with each other; (3) abused when results are used to *compare* schools and teachers; (4) abused when classes are specially prepared to pass the tests to be used; (5) a poor incentive when the vigorous crammer stands higher than the faithful student.

2. The character of examination tests: (*a*) They should not be narrow and technical; should not emphasize "all the lumber of the text books:" (1) Such tests narrow and groove both instruction and study; (2) a class average of 90 to 100 per cent. in an examination indicates narrow tests or special drilling on the knowledge tested. (*b*) They should test the pupil's knowledge of the *subjects taught*, of important facts and principles: (1) They should test understanding more; memory; training before cramming; (2) they should not be confined to the known instruction of the teacher.

3. They should be held with sufficient frequency to make the pupil's standing depend not on one but on several examinations: (*a*) Examinations held monthly, twice a term, or once a term: advantages; disadvantages; (*b*) the topical method best for country schools: (1) Readers and spellers to be divided into sections say of ten to twenty lessons each, and a certain per cent. on each section required of the class as a condition of passing to the succeeding section; (2) arithmetic, geography, grammar, &c., naturally divided into subjects; a mastery of each required, with the reaching of a certain examination standard as a condition of passing to the succeeding subject.

4. Methods of examinations: (*a*) Oral: advantages and defects; (*b*) written: advantages and abuses.

UNITED STATES HISTORY.

LESSON I.

Ends or objects in view.

1. Knowledge: (*a*) Value as exercise of mental powers; (*b*) source from which to draw in emergency; (*c*) discretion as to what is important; (*d*) how imparted.

2. Use to which the knowledge is to be put: (*a*) Made real by association with places; (*b*) gradual development of causes into results; (*c*) a judgment as to the tendency of (1) acts, (2) influences, (3) men's characters.

3. Moral instruction: (*a*) Use of noble deeds and characters; (*b*) effects of treachery and crime upon character; (*c*) cost of peace and liberties of to-day.

4. Useful citizenship: (*a*) Elements: (1) education, (2) religion, (3) patriotism, (4) knowledge of rights, duties, &c.; (*b*) Purposes: (1) peace, (2) order, (3) honest administration of public affairs, (4) good government.

LESSON II.

Methods and aids.

1. Maps and charts: (*a*) Selected; (*b*) original; (*c*) how prepared and how used.

2. Reference books: (*a*) What can be most readily obtained; (*b*) when and how used (by teacher, by pupil).

3. Reviews: (*a*) How planned; (*b*) how conducted; (*c*) objects in view; (*d*) how to give pupils a hearty interest in them.

3. School-house architecture.—The lack of information on the subject; how information may be obtained; good buildings the cheapest; the duties of the school officers charged with this trust; legislation in regard to; need of; what may be done in the way of adornment of school buildings and grounds.

SECOND DAY.

Tuesday, 9 a. m. to 12 noon.

	Minutes.
1. Opening exercises, devotional; music; roll call	20
2. The alphabet, or teaching beginners to read.—The "sentence" method, the "word" method, and the "A B C" method; illustration of each	30
Discussion	10
3. General history.—Its importance as a common school study; illustrations from the history of France and England; recitation	30
Discussion	10
4. Query box.—Calisthenics	10
5. Writing.—When should the child begin to write? Should it first learn script or print? Should it use slate, paper, or blackboard? Illustrations by class	30
Discussion	10
6. Tardiness, evils and remedies.—Value of prizes, cards of merit, and reports as remedies. Should there be a uniform rule in each district and county of marking tardy?	25
Discussion	10

Recess till 2 p. m.—Afternoon, 2 to 5 p. m.

1. Arithmetic.—Addition and subtraction; how to teach them to beginners; adding by tens	30
Discussion	10
2. Physiology.—Digestion of food and the circulation of the blood; necessity of a correct knowledge of these subjects; illustrations	30
Discussion	10
3. Language lessons.—The first steps in teaching pupils a correct use of the mother tongue; writing and defining words; sentence building	30
Discussion	10
4. Query box.—Calisthenics	10
5. Spelling—How should it be taught? Oral and written methods compared	30
Class drill	10

Recess till 7.30 p. m.—Night session.

1. National aid.—Necessity for; how it should be distributed; dangers from illiteracy.
2. What are the relations of parent, teacher, and pupil in school government? The teacher's influence, duties, and responsibilities in regard to the morals of the pupil.

THIRD DAY.

Wednesday, 9 a. m. to 12 noon.

1. Opening exercises, devotional; music; roll call	20
2. Reading.—How to secure the natural tone and expression in reading; read as you talk; illustration by members of the institute	30
Discussion	10
3. Arithmetic.—How to teach beginners multiplication and division; illustration	30
Discussion	10

	Minutes.
4. Query box.—Calisthenics	10
5. Geography.—Latitude and longitude; how to teach; illustrations on the globe or blackboard	30
Discussion	10
6. Non-attendance at school.—Causes of and remedies for; should the teacher's salary, or his position either, depend in any degree upon the per cent. of attendance?	30

Recess till 2 p. m.—Afternoon, 2 to 5 p. m.

1. History.—Methods of teaching; periods, topics, biographies	30
Discussion	10
2. Language lessons.—How to teach the several kinds of sentences; composition.	30
Discussion	10
3. Query box.—Calisthenics	10
4. Physiology.—Respiratory organs; the necessity for pure air; amount consumed by each individual; results produced by breathing impure air	30
Discussion	10
5. Writing.—Position, movements, and pen holding; time to be devoted to writing by every pupil each day	20
6. Spelling.—How to teach written spelling; class drill	30

Recess till 7.30 p. m.—Night session.

1. Should there be a uniform course of study and provision for graduation in the common schools of the State? If so, how may the system be best introduced?
2. School room hygiene.—Improper heating, ventilating, lighting, seating, and cleaning school buildings; how each affects the health of the children and teacher; remedies.

FOURTH DAY.

Thursday, 9 a. m. to 12 noon.

1. Opening exercises, devotional; music; roll call	20
2. Geography.—Zones, boundary and climate of each; effect of winds, ocean currents, and mountains on climate	30
Discussion	10
3. Mental arithmetic.—Methods of teaching it; illustrations	30
Discussion	10
4. Query box.—Calisthenics	10
5. English grammar.—At what age should the pupil take it up? Parts of speech; how to distinguish; how to teach	30
Discussion	10
6. Letter writing.—The superscription, heading, introduction, and conclusion of letters; illustrations	30
Discussion	10

Recess till 2 p. m.—Afternoon, 2 to 5 p. m.

1. Reading.—How to get the sense; how to teach advanced pupils; specimen reading by members of the institute	30
Discussion	10
2. History.—How to teach current history; necessity of a knowledge of current events and public affairs in the world	30
Discussion	10
3. Query box.—Calisthenics	10

Minute

4. Mineralogy.—The importance and value of a knowledge of this subject to the people of the State. Why is it neglected in the public schools? 3
Discussion 1
5. Map drawing.—Methods of teaching it; illustrations 2
Discussion 1
6. Supplementary reading.—What do the pupils read while out of school? How shall suitable reading matter be supplied? 2

Recess till 7.30 p. m.—Night session.

1. Should there be a uniform system of teachers' examinations throughout the State? If so, how may it be best attained; who shall prepare the questions?
2. The free text book question. Would it be a saving of money for each board of education to buy a sufficient supply of text books for the schools of the districts? What is the experience of other States? Is the proposition practicable?

FIFTH DAY.

Friday, 9 a. m. till 12 noon.

1. Opening exercises, devotional; music; roll call 2
2. Geography of West Virginia.—Extent, position, boundaries, mountains, rivers, soil, climate, natural resources, population, cities, wealth, and schools 3
Discussion 1
3. Can the natural sciences be taught in the public schools without prejudice to the regular studies? If so, why is it not done? Are the teachers or patrons to blame? 3
Discussion 1
4. Query box.—Calisthenics 1
5. Spelling.—Rules of; how to teach. Slate exercise 2
Discussion 1
6. School law of the State.—Explanationsc 3
Discussion 1

Recess till 2 p. m.—Afternoon session, 2 to 5 p. m.

1. Arithmetic.—How to teach beginners to calculate interest; the value of such knowledge; percentage 3
Discussion 1
2. Music in school; its importance; is it taught and practised in the schools? May not every public school open and close with music 3
Discussion 1
3. Query box.—Calisthenics 1
4. English grammar.—How to teach correct composition; false syntax; its uses and abuses 3
Discussion 1
5. Writing.—Formation, analysis, uniformity, space, and slant of the letters 2
Discussion 1
6. Newspapers.—Their influence in education; how they may be used in the schools; their value 2
Discussion 1

Recess till 7.30 p. m.—Night session.

1. Literary training in the public schools.—How to secure an interest in the writings and lives of the good and great men of our own country; Dr. John B. Peaslee's plan in the Cincinnati (Ohio) schools; its success; its adaptation to schools of all grades everywhere.
2. Teacher training.—Has the State provided sufficiently for the training of the teachers? Additions and improvements that should be made.

SIXTH DAY.

Saturday, 9 *a. m. to* 12 *noon.*

	Minutes.
1. Opening exercises, devotional; music; roll call	20
2. Grammar.—Analysis of sentences; relations of analysis to a practical knowledge of the use of language; how to teach analysis	30
Discussion	10
3. Organizing a school at the beginning of a term.—Methods; order of exercises; what to do first, second, third, &c	30
Discussion	10
4. Query box.—Calisthenics	10
5. Recreation and exercise for pupils.—How to control the sports of pupils; dangers of the playground	30
Discussion	10
6. Teachers of public schools.—Their grave and significant responsibilities; how the salaries now paid them compare with the work to do; does the salary compare with the work now being done? The outlook of the profession	30
Closing addresses.	

GENERAL REGULATIONS.

1. The institutes shall be opened and closed promptly at the time prescribed in the printed program, the roll called at each session, and absences noted. Instead of calling the roll, each member of the institute should be given a number as soon as enrolled. One of the secretaries should take a convenient position at the door of the place of meeting, so as to see those who come and go. As each member of the institute enters the door, he or she should announce his or her number; the secretary then notes the fact on his roll. This method saves much valuable time. When any member leaves the institute while it is in session, the time of his going and returning should be noted, and the time, if material, deducted from his attendance, six hours being counted as a day. Complaint was made to me last year that some teachers would come in, answer to their names, and then retire until the afternoon roll call, when they would repeat the operation, and claim attendance for the day, when in fact there was no attendance. Such conduct, of course, is not general, but very limited. It is only necessary to say to those conducting the institutes that their duty in the matter is the same as with pupils at school. Though you may not have the power to punish for truancy, you have the power to refuse to give a certificate of attendance to such an one.

2. The conductor and county superintendent shall make out two copies of the roll and report of the institute on the blanks furnished for that purpose, one of which shall be sent to the State superintendent and the other preserved by the county superintendent. On the receipt of a duly certified copy of the report by the State superintendent, the compensation allowed the conductor by law will be paid him. If more than one sheet is required for the report, make the certificate on the last. The secretaries should be directed, in keeping the roll, to have two sheets, one for ladies and one for gentlemen, giving to each a number; in this way the names can be entered in the order the teachers enroll, and save confusion in numbering.

3. The instructor, aided by the county superintendent, shall have supreme control of the institute and shall conduct its exercises as in a well ordered school. There should be elected or appointed at least two persons to act as secretaries, one to keep items of interest for publication and the other to keep the roll and note the time of the members. The secretaries could relieve each other.

4. The program of exercises for the day and night sessions are not to be considered as "*iron bound*" and under no circumstances to be varied from, but rather as an intelligent guide to the course of instruction to be followed. If the instructor finds that any particular subject in a given institute requires special attention, more than

is given it in the program, he may drop some other exercise to give him more time for it. But, unless for good cause, the program must be conformed to.

5. The exercises in the natural sciences are outside the usual course in the common schools, but the necessity for the introduction of such exercises is conceded by most persons conversant with the condition and needs of our schools. This method is adopted to give the subject public attention preparatory to its adoption. I hope the instructors and county superintendents will take special pains to introduce this matter to the favorable notice of the teachers and people. We undoubtedly give too much time to arithmetic and grammar in their purely technical sense. It is of very little consequence to the future farmer, merchant, mechanic, or housewife whether they understand "casting out the nines" and "elevens," "cancellation," the intricacies of compound and complex fractions, "greatest common divisor," and "least common multiple," "circulating decimals," &c., or how to dispose of some "idiomatic knot" by the technical rules of grammar; but it is very essential indeed that all of these should understand something of the physiology of their own bodies, the laws of health, something of the chemistry of food, air, water, and the soil; something, too, of the minerals that we see being developed all around us. Those and similar subjects may be taught every day by any teacher of ordinary attainments; yet it is not done except in a very few of our schools. Nothing so interests the child as nature, nothing is so irksome to it as the dry rules and definitions which it is compelled to commit and yet sees no reason or application for. I do not mean to be understood as not favoring *hard work* at school; on the contrary, I urge *more* and *better* work. The teachers are not altogether to blame, nor do I find fault with a great deal of their work, for it is but just to say that, taken altogether, our teachers have done noble work. But because noble work has been done is no reason why nobler work should not be done.

6. The county superintendent should secure a good room for the meetings of the institute. It should be large, convenient, well lighted, and well seated. A blackboard, chalk, erasers, a globe, and such other apparatus as may be needed should be procured. Lamps should be secured for the night sessions. A church, or the lecture room of a church, is probably the best style of a room. It will seat more people and is generally more convenient than a school-house. Besides, churches generally have lamps in them. If proper care is taken of the building, one can nearly always be obtained. The meetings should be held in the same building the entire week if at all convenient. Securing boarding at reasonable rates for so large a number is sometimes a very important matter. The county superintendent should interest himself in this matter beforehand, so the teachers may have comfortable places at reasonable rates within easy access of the place of meeting. The time and place of meeting should be extensively advertised, with a cordial invitation to school officers and the citizens generally to attend both day and night sessions.

7. The "query box" is meant for mental relaxation and "calisthenics" for physical relaxation, but each is strictly part of the institute program. No better lesson may be given in the program than intelligent attention for a few minutes twice a day, with music, or counting, to a drill of all the members of the institute in some calisthenic exercise.

8. The county superintendent shall deliver to each member desiring it a certificate of attendance on the institute, as required by law. The certificate of attendance furnished this year has attached to it an enrolment card which the person wishing to become a member of the institute is required to make out and hand to the secretary, or some one for him. The cards will be distributed the first day and afterward to those who may wish to enroll. The card should be handed the secretary the day you enroll. When the certificate is delivered, the enrolment card is also returned with it, the secretary in the meantime having secured the information required for the report.

9. The exercises of the institute shall be strictly didactic and conducted so as to combine instruction with drill and to impart a fuller knowledge of the subjects taught

in our common schools, with practice in the best methods of teaching them. Messrs. Van Antwerp, Bragg & Co., school book publishers of Cincinnati, Ohio, have kindly furnished me small blank books for the teachers to make notes of the subjects discussed in the institute. I hope the teachers will use these note books to make full and ample notes of methods, &c.

10. Curious and profitless questions should be strictly excluded from the time of the institute, as also subjects that are beyond the duties of the primary school teacher.

11. The conductor and county superintendent should use all proper means to secure public interest in the work of the institute, both for the day and night exercises. The best local talent should be secured to debate the questions proposed or those selected for discussion. These questions and similar ones are of importance to the healthful progress of our public schools. Some of the questions are new, some are old, but all have in them sufficient merit to command attention. The question of national aid, uniformity of examinations, uniform course of study, school-house architecture, educational journals, school room hygiene, free text books, literary training, teacher training, &c., are all questions of present importance, some of them freighted with telling results to all our people, if properly turned to account. Teachers must make the advance steps. It will not do to wait until on-coming public opinion routs us from our positions and derides us for our fogyism. The true place of the teacher is leader, not follower; sower, not reaper.

12. The institutes last year were fairly successful, some of them eminently so, but they must each be better this year. There is no good reason why they should not be. The program as a whole is an index of subjects that are of great interest to teachers. All the interesting questions are not presented, but many that are of great importance. The teacher that wishes true success must master matter, mind, and method. In proportion as he is master in these realms may he expect success. I again urge conductors, superintendents, teachers, and friends of education to make the institutes this year the very best yet held in the State. On your conduct in all these matters largely depends the public appreciation of the teacher's services.

INSTITUTE PROGRAM FOR 1883.

FIRST DAY.

Monday afternoon, 2 to 5 p. m.

		Minutes.
1.	**Opening exercises**, devotional; music	15
2.	**Opening address** by the instructor, indicating the course he intends to pursue and the part he desires the teachers to take in the institute	30
3.	**Appointment** of secretaries and enrolment	15
4.	**Mental arithmetic.**—How to teach beginners to count and add and subtract by the use of objects; illustrated by using a numeral frame	30
5.	**First day of school.**—How shall the teacher ascertain the grade of each pupil in the several branches? The help to this end secured by school blank No. 25 (now incorporated in the permanent register); importance of carefully filling this blank	30
	Discussion	15
6.	**Calisthenics in public schools.**—Importance of healthful exercise of body and and limbs to promote strength and graceful movement	20
	Discussion	10

Recess till 7.30 p. m.—Night session.

1. **Natural sciences.**—Experiments with simple apparatus such as every teacher may either make or procure with little labor or expense.

2. Free text books.—Would it be economy for boards of education to purchase text books and supply pupils free of charge? Is it not the duty of the authorities in the respective localities to furnish necessary text books to the children of indigent parents?

SECOND DAY.

Tuesday, 9 a. m. to 12 noon.

	Minutes.
1. Opening exercises, devotional; music; roll call	20
2. Appointment of committee on resolutions	5
3. The alphabet, or teaching beginners to read; the "sentence" method, the "word" method, and the "A B C" method; illustration by a class of little children who have never attended school	30
Discussion	10
4. History.—What features of history should be most carefully studied by pupils?	30
Discussion	10
5. Query box	10
6. Spelling.—Why should the pupil begin written spelling before spelling orally?	30
Discussion	10
7. Manners and morals.—Importance of, and how to teach these subjects in the public schools	25

Recess till 2 p. m.—Afternoon 2 to 5 p. m.

1. Geography.—Globes, necessity for, in every school, and manner of using them to show the form and motions of the earth, and the results of these motions	30
Discussion	15
2. What apparatus should the teacher have in order to teach? How can such apparatus be obtained and at what cost?	30
Discussion	15
3. Calisthenics	10
4. Physiology.—Digestion of food and the circulation of the blood; injuries to health resulting from ignorance of and inattention to these subjects	30
Discussion	15
5. Tardiness.—Its evils and remedies; value of prizes, cards of merit, reports, and attractive opening exercises as remedies; the necessity of uniformity in each district and county of marking tardy	25
Discussion	10

Recess till 7.30 p. m.

1. Planting trees in school grounds.—Importance of; ornamentation; absorbing impure gases, sheltering from winds; exciting an interest in the uses and value of the several kinds of timber; does the destruction of native forests tend to increase disastrous floods?
2. The teacher.—Position, social and official; education, academic and normal; general intelligence and culture; habits, manners, and morals.
3. Industrial education.—Have the pupils who leave the free schools after a fair training false notions of manual labor? Does our educational system tend to draw too many of our boys and girls from the farm and workshop? In either case, if true, is the teacher at fault? The teacher's duty; the crime of idleness; the dignity of labor; skilled labor: its profits to the individual and the state.

THIRD DAY.

Wednesday, 9 a. m. to 12 noon.

	Minutes.
1. Opening exercises, devotional; music; roll call	20
2. Writing.—Should pupils in the first reader learn the principles of writing or write by imitation? Should they first learn script or print; should their slates be permanently ruled? Illustrated by a class of children in the first reader	40
Discussion	15
3. Arithmetic.—Notation and numeration; how to teach beginners to write and read numbers; should they be required to write and read numbers beyond the thousand period before passing, the first time, through the four fundamental rules?	20
Discussion	10
Query box	15
4. Language lessons.—What part of English grammar should be taught pupils in the first reader; in the second reader? Illustration by class with slates..	20
Discussion	10
5. Educational journals.—Their advantages to teachers who read them; how can teachers enlarge the circulation and increase the efficiency of the West Virginia School Journal? Would a reporter for each county, selected by the teachers in the institutes, add to its interests and efficiency? Would not the teachers be largely benefited if all the school officers in the State could be induced to subscribe for and read an educational periodical?	20
Discussion	10

Recess till 2 p. m.—Afternoon, 2 to 5 p. m.

1. Reading.—How to teach pupils to read in an easy and natural manner; read as they talk; illustration by a class of beginners	30
Discussion	10
2. Geography.—Latitude and longitude; the best methods of teaching; illustrations by use of globe or blackboard	20
3. Supplementary reading.—What do the pupils read while out of school? How shall suitable reading matter be supplied?	20
4. Calisthenics	10
5. Teachers' examinations.—Should teachers who own and use school apparatus and read and study school journals and educational works receive credit therefor in their examinations?	20
Discussion	10
6. History.—Methods of teaching compared; periods, topics, biographies	30
Discussion	10
7. Can the natural sciences be taught in the public schools without prejudice to the regular studies? If so, why is it not done? Are the teachers or patrons to blame?	20
Discussion	10

Recess till 7.30 p. m.—Night session.

1. Should there be a uniform course of study and provision for graduation in the common schools of the State? If so, how may the system be best introduced? Value of school blank No. 25 (now incorporated in the permanent register) as an aid in grading common schools.
2. Dictionary in the school room.—Essential to the best school work; how to use; care and cost.

3. Reform school.—Objects and benefits. Shall our young criminals, by confinement in the workhouses, jails, and penitentiaries with hardened criminals, be made still more desperate and costly criminals, or shall an effort be made to reform them in a school of mental and manual discipline and labor, surrounded by healthful moral associations?

FOURTH DAY.

Thursday, 9 a. m. to 12 noon.

		Minutes.
1.	Opening exercises, devotional; music; roll call	20
2.	Arithmetic.—Addition and subtraction; method of teaching. Are there superior methods of teaching not now in general use among our teachers? Accuracy and rapidity; "breaking over the tens;" class drill in rapid addition.	30
	Discussion	10
3.	Language lessons.—What part of English grammar should be taught pupils in the third reader? In the fourth reader?	30
	Discussion	10
4.	Query box	15
5.	Writing.—Position, movements, and penholding; analysis, space, slant, and uniformity of letters	20
	Discussion	10
6.	School government.—Whispering in school; evils and remedies; should it be entirely suppressed? Is not idleness the prime cause of wilful whispering in school?	20
	Discussion	10

Recess till 2 p. m.—Afternoon, 2 to 5 p. m.

1.	Geography.—Map drawing; methods of teaching. Should all classes in geography be taught map drawing? Value of free hand outline map drawing in answering questions as to boundaries and location of places	30
	Discussion	10
2.	Spelling.—Methods of teaching; oral and written; record of misspelled words; importance of preserving work of pupil in written spelling; class drill	30
	Discussion	10
3.	Calisthenics	10
4.	History.—Constitution of the United States: its history and the incidents of its formation	30
5.	Physiology.—Respiration; amount of common air consumed by each individual; draughts; health of pupils	20
	Discussion	10
6.	Reading.—How to get the sense; emphasis, inflection; difference, if any, between reading prose and poetry; illustrations by members of the institute.	20
	Discussion	10

Recess till 7.30 p. m.—Night session.

1. School-house architecture.—Economy of well constructed and adequate school buildings. What are the best plans? Cost? How may information be obtained? Duties of school officers; powers of boards; needed legislation; location and size of school-house lot.
2. School room hygiene.—Heating, ventilating, lighting, seating and cleaning school buildings; influence of, upon public health; sacred duty of the teachers and school officers to provide and care for the health of the children committed to them.

FIFTH DAY.

Friday, 9 *a. m. till* 12 *noon.*

	Minutes.
1. Opening exercises, devotional; music; roll call	20
2. Literary training.—Importance of pupils memorizing the gems of literature. Adaptation of this subject to schools of every grade; concert recitation; the interest that may be excited in the lives and writings of good and great men; illustrations by each member of the institute reciting short gems	30
Discussion	10
3. English grammar.—Methods of teaching; value of analysis and parsing as helps to correct speaking and writing	30
Discussion	10
4. Query box	10
5. History.—Current history of the world; how to teach; newspapers essential in teaching current history. Should not every school subscribe for at least the county papers? Teaching pupils how to read them	30
Discussion	10
6. Arithmetic.—Multiplication and division; methods of teaching; are there superior practical methods of teaching these subjects not now in general use among our teachers? Accuracy and rapidity; class drill	20
Discussion	10

Recess till 2 *p. m.—Afternoon session,* 2 *to* 5 *p. m.*

1. School law of the State.—Amendments since 1881; opinions by the supreme court, attorney general, and State superintendent of free schools. (See appendix to biennial report of 1881-'82)	20
Discussion	10
2. Geography.—Zones; boundaries and climate of each; illustrations by use of a globe; leading causes which affect climate	20
Discussion	10
3. Music in school.—May it not be taught and practised in our schools with advantage both to pupils and teachers; its use as an opening and closing exercise; healthful moral effects upon pupils; love of music universal	20
Discussion	10
4. Calisthenics	10
5. Planting trees in school grounds.—How may the teacher best secure the co-operation of the pupils and patrons in planting and preserving shade and ornamental trees on school grounds?	20
Discussion	10
6. Arithmetic.—Interest and percentage; how to teach; value to pupils of all grades of a practical knowledge of these subjects, whether reached in the ordinary course of passing through the book or being taken up out of their order	30
Discussion	10
7. Composition.—How to make the work of writing compositions interesting and easy; how to secure clearness and elegance of diction	20

Recess till 7.30 *p. m.—Night session.*

1. Teachers' examinations.—Should the school law be so amended that teachers may be examined in one or two branches each day of the institute and certificates granted at the end of the institute week?

2. Non-attendance.—Large per cent. of children of school age who attend no school; who shall go after them, the teacher or truant officer? Shall they be persuaded or forced into school? School banners as aids to increase attendance.

SIXTH DAY.

Saturday, 9 a. m. to 12 noon.

	Minutes.
1. Opening exercises, devotional; music; roll call	20
2. West Virgina.—Extent, position, boundaries, mountains, rivers, soil, climate, timber, coal, iron, salt, oil, building stones, clays, agricultural productions, live stock, manufactories, population, cities, State institutions, schools, and history from the earliest settlement	30
Discussion	10
3. Letter writing.—The superscription, heading, introduction, and conclusion of letters; illustrations	20
4. Query box	10
5. Report of the committee on resolutions	10
Discussion, with a general interchange of views as to the value of the institute	30
6. Closing address of the instructor	20
7. Announcements as to time and place of teachers' examinations	5
8. Delivery of certificates of attendance	10
9. Music.—Adjournment.	

GENERAL REGULATIONS.

OPENING EXERCISES.

The institutes shall be opened and closed promptly at the times prescribed in the printed program. The opening exercises and all the business of the institute should be conducted as in a well ordered school.

SECRETARIES.

There should be at least two persons appointed to act as secretaries, one to keep items of interest for publication and the other to keep the roll and note the time of the members. The secretaries may relieve each other.

The secretaries should, in keeping the roll, have two sheets, one for ladies and one for gentlemen, giving to each a number. In this way the names can be entered in the order the teachers enroll, and save confusion in numbering.

ROLL CALL.

Instead of calling the roll, each member of the institute should be given a number as soon as enrolled. One of the secretaries should take a convenient position at the door of the place of meeting, so as to see those who come and go. As each member enters, he or she should announce his or her number and the secretary note it. This saves much valuable time. When a member leaves the institute while it is in session the time of his going and returning should be noted, and the time, if material, deducted from his attendance, six hours being counted as a day.

A few teachers have been known to report their presence at the morning session and then retire, repeat the operation in the afternoon, and claim a full day's attendance. It is only necessary to say to those conducting the institutes that their duty in the matter is the same as with pupils at school. Though you have no power to punish for truancy, you have power to refuse to give a certificate of attendance to such an one.

ENROLMENT.

The certificate of attendance has attached to it an enrolment card, which the person wishing to become a member of the institute is required to make out and hand to the secretary. The cards should be distributed the first day, and afterward to those who may wish to enroll. The card should be handed the secretary the day you enroll. When the certificate is delivered the enrolment card is also returned with it, the secretary in the mean time having secured the information required for the report.

PLACE OF MEETING.

The county superintendent should secure a good room for the meetings of the institute. It should be large, convenient, well lighted, and well seated. A blackboard, chalk, erasers, a globe, and such other apparatus as may be needed should be procured. Lamps should be procured for the night sessions. A church, or the lecture room of a church, is probably the best style of room. It will seat more people and is generally more convenient than a school-house. Besides, churches generally have lamps in them. If proper care is taken of the building, a church can nearly always be obtained. The meetings should be held in the same building the entire week if convenient.

The time and place of meetings should be extensively advertised, with a cordial invitation to school officers and the citizens generally to attend both the day and night sessions.

BOARDING PLACE.

Securing boarding at reasonable rates for so large a number is very important. The county superintendent should interest himself in this matter beforehand, so the teachers may have comfortable places at reasonable rates within easy access of the place of meeting.

INSTRUCTOR.

The instructor, aided by the county superintendent, shall have supreme control of the institute.

Each instructor is expected to provide himself with such simple apparatus as may be necessary to illustrate the subjects named in the program and the best methods of teaching them.

PROGRAM.

The exercises of the institute shall be strictly didactic and conducted so as to combine careful instruction in the subjects taught in our common schools with practical illustrations of the best methods of teaching them.

The program of exercises for the day and night sessions are to be considered as an intelligent guide to the course of instruction to be followed.

If the instructor finds that any particular subject in a given institute requires special attention, more than is given it in the program, he may drop some other exercise to give more time to it. Unless for good cause, the program should be conformed to.

Curious and profitless questions should be strictly excluded from the time of the institute, as also subjects that are beyond the duties of the public school teacher.

RECESS.

The "query box" is meant for mental relaxation and "calisthenics" for physical relaxation. No better lesson may be given in the program than the intelligent attention for a few minutes twice a day, with music or counting, to a drill of all the members of the institute in some calisthenic exercise.

NATURAL SCIENCES.

The exercises in the natural sciences are outside the usual course in the common schools, but the necessity for the introduction of such exercises is conceded by most persons conversant with the condition and needs of our schools. I hope the instructors and county superintendents will take special pains to introduce this matter to the favorable notice of the teachers and people. We give too much time to technical arithmetic and grammar. It is of very little consequence to the future busy men and women whether they understand "casting out the nines" and "elevens," the intricacies of compound and complex fractions, "circulating decimals," &c., or how to dispose of some "idiom of the language" by the technical rules of grammar; yet it is very essential indeed that they should understand something of the physiology of their own bodies, the laws of health; something of the chemistry of food, air, water, and the soil; something, too, of the minerals that are being developed all around us. These and similar subjects may be taught every day by any teacher of ordinary attainments; yet it is not done except in a very few of our schools. Nothing so interests the child as nature, nothing is so irksome to it as the dry rules and definitions which it is compelled to commit and for which it sees no reason or application. I do not mean to be understood as not favoring *hard work* at school; on the contrary, I urge *more* and *better* work. The teachers are not altogether to blame. It is not enough, however, for teachers to say "we have done well." The demand for better work each year becomes more and more imperative. The subject of teaching and the work of the teacher is receiving more attention now than ever before. Defective and unphilosophic methods must pass away, and the teacher that holds on to "old methods" because they are old may be left in the shallows of the past, while the active and progressive teacher who is "willing to learn" will go to the front as certainly as the "world moves."

LITERARY TRAINING.

Literary training is one of the most important and at the same time attractive exercises that our teachers can introduce in the schools. I call especial attention to this subject on account of its universal application to our schools and its healthful effects upon the moral and literary habits of the pupils.

TREE PLANTING IN SCHOOL GROUNDS.

Planting trees in school grounds, as well as the general subject of forestry, has recently received marked attention in the State. It is earnestly recommended that the teachers and school officers make the subject a part of their work, and so train the boys and girls that their presence shall be a protection rather than a menace to shade and ornamental trees in public and private grounds. Teach them to plant and protect, and to

Find tongues in trees, books in the running brooks,
Sermons in stones, and good in everything.

NEWSPAPERS.

Newspapers are perhaps the greatest ally of the teacher in the war upon ignorance and prejudice. This is the age of newspapers. The editors of the papers are all favorable to the cause of universal education, and are willing to publish any item of news concerning the schools or give space to profitable discussion of timely topics concerning methods of teaching, government of schools, or taxation for education. Teachers should read the papers and teach their pupils how to read them. They will depend upon the papers, after leaving school, for a practical realization of much that is taught them while there.

CLASS OF PUPILS.

The program provides that some of the lessons shall be developed and the methods of teaching the subjects illustrated by a class of pupils brought into the institute for the purpose. This of course will require great tact and care upon the part of the instructor to secure the best results. Yet the teachers have a right to demand that theories be shown to be practical when they are urged to adopt them in their schools. This can be done by the skilful instructor.

RESOLUTIONS.

The county superintendent should forward to the State superintendent's office a copy of any resolutions adopted by the institute approving any particular part of the school law or policy, recommending changes or repeal, or giving opinions on any question of public interest relating to our school interests.

REPORT.

The instructor and county superintendent shall make out two copies of the roll and report of the institute on the blanks furnished for that purpose, one of which shall be sent to the State superintendent and the other preserved by the county superintendent. On the receipt of a duly certified copy of the report by the State superintendent, the compensation allowed the conductor by law will be paid him. If more than one sheet is required for the report, make the certificate on the last.

CERTIFICATE OF ATTENDANCE.

The county superintendent shall deliver to each member desiring it a certificate of attendance on the institute, as required by law.

NOTE BOOKS.

Messrs. Van Antwerp, Bragg & Co., school book publishers of Cincinnati, Ohio, have kindly furnished small blank books for the teachers to make notes of the subjects discussed in the institute. These if properly used will be of great value to the teacher.

STATE SUPERINTENDENT'S REPORT.

There are a few copies of the biennial reports for 1879–'80 (Superintendent Pendleton) and of 1881–'82 (Superintendent Butcher) in the State superintendent's office, for free distribution to persons who value them. By application to the office they may be obtained.

THE PUBLIC.

The instructor and county superintendent should use all proper means to secure public interest in the work of the institute, both for the day and night exercises. The best local talent should be secured to debate the questions proposed or those selected for discussion. These questions and similar ones are of importance to the healthful progress of our public schools. Some of the questions are new, some are old, but all have in them sufficient merit to command attention. The question of a uniform course of study, the teacher's position, planting trees in school grounds, free text books, school-house architecture, school room hygiene, teachers' examinations, non-attendance, reform school, and industrial education are all questions of present importance, some of them freighted with telling results to our people, if properly turned to account. Teachers must take the advance steps. It will not do to wait until public opinion drives us from our positions and ridicules us for our fogyism. The true place of the teacher is leader, not follower; sower, not reaper.

PAST AND PRESENT.

Our institutes last year were successful, some of them eminently so. There is no good reason why they should not be more so this year. The program as a whole is an index of subjects that are of great interest to teachers. The interesting questions are not all presented. This cannot be done. The list, however, will be found to contain a large number of interesting subjects. The teacher that wishes true success must *master matter, mind, and method*. In proportion as he is master in these realms may he expect success. I again urge instructors, superintendents, teachers, and friends of education to make the institutes this year the best ever held in the State. On your conduct in all these matters largely depends the public appreciation of the teacher's services.

D.—ILLINOIS.

Hon. Henry Raab, State superintendent, had a problem of another sort to solve when issuing a program for county institutes in Illinois for the summer of 1883; for in that State institute work is not regulated by any law and only advisory measures can be taken. Mr. Raab prefaces his program with some advice of singular wisdom and shrewdness, which is quoted here as valuable in itself and useful to people in many places outside the limits of Illinois:

> The teachers' institute is an important factor in the educational work of the State. As you are about to hold institutes this summer—I take it for granted that you are—some advice with regard to the manner of doing this seems appropriate.
>
> So long as very many of the teachers of the State have not had any professional training for their work some means must be employed to supply this deficiency; and for many years past the practice of bringing the older experienced teachers in contact with the younger inexperienced ones for the purpose of instruction and the exchange of ideas, has proved successful. What the teachers have learned—their book knowledge—you are able to test by your examinations for certificates; and, valuable and essential as this kind of knowledge is, it is not to be compared in value with the teachers' ability to impart instruction, their method of teaching. The latter can be tested by actual work in the school room only. It may be acquired by experimenting; but in this way years of strength on the part of teachers are wasted, not to speak of the precious material experimented upon—young, tender human souls—that will be formed for good or for ill, like wax in the master's hands. To prevent in some measure this experimenting, the teachers' institute should principally be conducted so as to instruct the young teachers in natural, rational methods in the elementary branches: reading, arithmetic, penmanship, geography, and history. Irrational methods cause a waste of the teachers' and pupils' time and the people's money, and contribute more to hinder true progress and to bring the profession of teaching into ill-repute than any other thing.
>
> That the instruction in and the exemplification of methods do not exclude academic instruction, and consequently improve the qualifications of teachers also in this direction, is obvious. Also, the knowledge necessary for passing an examination may incidentally be acquired; but cramming for passing an examination is certainly to be deprecated, and ought, by no means, to be the prime object of attendance upon an institute. Too much time, also, is often consumed by the discussion of parliamentary rules and fine grammatical points; I earnestly pray you, avoid this! The teachers come together for work, work that will tell in their school rooms next term, and the time is too short to admit of disputations and wrangles over subtleties.
>
> The legitimate objects of the county teachers' institute are:
>
> 1. To impart instruction (*a*) in subjects to be taught, (*b*) in methods of teaching, and, of these, the latter is the more important.
> 2. To unify, in some measure, the work done in the schools of the county.
> 3. To promote a professional esprit de corps by bringing the less experienced into contact with maturer minds, and so leading them to higher aspirations.
> 4. To instruct the community upon the aims and scope of the school.
>
> The subject matter to be taught ought to be presented by the instructor or conductor without the help of the book; free, easy expression of thought, a fluency of speech, ought to be insisted upon. Though most of the text books are logical in the arrangement with regard to the science or art to be taught, they are rarely so arranged as to serve for a guide in teaching the science or art. The conductor ought to classify the subject matter with regard to the nature of the little learners and to the difficulties

experienced in grasping the same. And in this way the matter ought to be presented to the teachers.

You are now elected for a term of four years, and, by laying your plans for a series of institutes during that time, may do much for furthering the cause of popular education in your respective counties. You can begin at the beginning and push the work higher from year to year, thus creating a healthy sentiment among the people and securing a better class of teachers for your schools. It is hoped that your county boards will assist you in defraying the expenses of the institute, and the advantages to be derived from it will be an incentive for you to begin at once and to carry on the noble work.

Be careful to employ competent instructors, for upon their work, their energy, their methods, their general conduct, the success of the institute depends. Only such teachers should be employed as instructors as are fully acquainted with the different methods pursued in teaching primary classes. They should not be mere lecturers, but actual schoolmasters, who have tested their theories in the school room for years and are able to show the advantages of their own methods, as well as the deficiencies of other methods. Beware of such as have "pet theories to air," the itinerant elocutionist, et id omne genus. Such instructors can only mislead young teachers in their aims and aspirations. Institute work is persistent, honest toil, not ostentatious, dramatic entertainment.

Wherever it is possible, classes of children at different stages of advancement ought to be present for the instructor to work with and to exemplify his methods. In penmanship, drawing, and music, the pupils of the institute, the teachers, may be formed into classes to learn both the subject matter and the method of teaching it. Devote part of the time to academic instruction, to instruction in higher branches, but *let the greater part of the time be occupied in teaching methods;* for, if the children are to learn to love school and its work, the teachers must have rational methods. Where the method of the teacher is without plan and object, where it is irrational or defective, the children grow weary and lose their interest in the matter presented. And let me say it again, *methods* above all things.

Another feature of the institute should be the exhibition of pupils' work from the schools of the county. By this the efficiency of the teachers can be tested and the interest of the patrons of the school aroused. Another way to interest the people in your work is by having evening lectures on educational topics. Have vocal music to enliven the exercises; in the course of several years you may create a love of music not only among the teachers, but by carrying it into the school rooms, through them, also among the people at large.

Leaving the advanced academic instruction to the conductor of the institute, who will soon find what the members need in this direction, I submit the following plan and outline for the professional work. I have been careful not to enter too much into details, so as not to hamper you and the conductors of your institutes in the necessary freedom of action. The branches are placed in the order in which they ought to be taken up and with regard to their importance. Though in practice school government should not be separated from instruction, in theory we may well discuss this part of the teacher's work separately. The mechanical means of governing the school should receive attention in the institute; what makes the work easy and pleasant should be exemplified and practised with the classes of children before the institute. Silent occupation of classes, teaching pupils how to study a lesson, best mode of written examinations, how to secure attention, how to ask questions, and many other matters of a similar nature may form material for discussion and instruction.

PROGRAM FOR INSTITUTES.

I.—LANGUAGE.

(*a*) *Speaking.*—Model object lessons given by the conductor to classes of pupils at different stages of advancement; conversational exercises, and teaching how to commit pieces of poetry to memory.

(*b*) *Reading.*—First steps; different reading methods; history of methods; value of different methods. Model reading exercises in first, second, and third readers. Principles of good reading. (The common school has to do more with sense reading than with æsthetical reading, elocution.)

(*c*) *Written language.*—Penmanship. Drill in classes and demonstration of any system of penmanship. Principles of small letters and capitals. How to teach spelling, oral and written. Use of the dictionary and diacritical marks. (Penmanship does not receive the attention it deserves, because the teachers, as a rule, are not acquainted with proper methods of teaching it.)

(*d*) *Composition.*—In connection with object lessons and reading. Business forms. (Let the teacher understand that frequent, better yet, daily, composition exercises only can insure success.) How to use the reading lesson for a composition exercise.

(*e*) *Grammar.*—Etymology and syntax. Dwell chiefly upon the grand underlying principles of the language. Devote some time to the consideration and correction of the more common mistakes made in the use of the language.

NOTE.—I call attention again to what I have said above about the discussion of nice grammatical points.

II.—MATHEMATICS.

(*a*) *Arithmetic.*—The basis of all future success in number work is the thorough understanding of the four fundamental rules within the series from 1 to 10. All the rest is but a repetition of this. How to teach this successfully ought to engage the conductor's and teachers' attention. Extend the work to 20 and then to 100, taking care all the time to show how the decimal system is most naturally and rationally taught. Extend the work in the four fundamental rules to 1,000, and then to infinity. Fractions. Percentage and application of the same.

(*b*) *Geometry.*—Introduction to the science by concrete work with solids, planes, lines, and points. Mensuration and geometrical drawing.

(*c*) *Algebra.*—How to introduce the science in a simple systematic way; work with the unknown quantity. Algebraic symbols and algebraic language.

NOTE.—Geometry and algebra are to receive only so much attention in an institute as is necessary for the better understanding of arithmetical principles and their application in teaching mathematical geography.

III.—GEOGRAPHY.

Object lessons for the introduction of the science; then the points of the compass, division of time, &c. Then the geography (topography) (*a*) Of the city, congressional township, and county; (*b*) of the State of Illinois; (*c*) of the United States; (*d*) of the continents and the earth as a whole; and (*e*) mathematical geography. The physical to be taught in connection with the political geography of the divisions, as indicated above.

Teach also the use of globes, charts, maps, and map drawing.

IV.—HISTORY.

(*a*) Of the United States.

(*b*) Methods of teaching history.

(*c*) Civil government and State and national constitutions.

(*d*) General history.

(This last subject only to be taught where time allows it.)

V.—SCHOOL LAW.

Duties of teachers and their relations to school officers. (Do not let this run into fruitless discussion.)

VI.—NATURAL SCIENCES.

Use of specimens and apparatus, and experiments. Dissections.

NOTE.—Though I do not undervalue the importance of the natural sciences as a means of mental discipline, I would suggest that they be taught in the institute only when the time allows it.

E.—MASSACHUSETTS.

In concluding this chapter and this circular of information three programs prepared for the shorter county institutes of Massachusetts by Hon. J. W. Dickinson, secretary of the State board of education, are presented:

PROGRAM FOR OCTOBER 5 AND 6, 1882.

Wednesday evening.

7.30. Lecture by Rev. Washington Gladden.

Thursday morning.

	Minutes.
10.00 to 10.10. Opening exercises	10
10.10 to 11.00. Arithmetic, analysis, fractions, and percentage (Mr. George A. Walton.)	50
11.00 to 11.10. Recess	10
11.10 to 12.00. Drawing (Mr. Charles M. Carter.)	50

Thursday afternoon.

1.30 to 1.40. Questions proposed by members of the institute	10
1.40 to 2.30. Method of assigning lessons and hearing recitations (Mr. Dickinson.)	50
2.30 to 2.40. Recess	10
2.40 to 3.30. Botany, elementary course (Mr. George. H. Martin.)	50
3.30 to 3.40. Recess	10
3.40 to 4.30. Lessons in teaching color. (Mr. Dickinson.)	50

Thursday evening.

7.00. General discussions.
7.30. Lecture.

Friday morning.

	Minutes.
9.30 to 9.40. Opening exercises	10
9.40 to 10.30. Geography, plan of topical teaching (Mr. Martin.)	50
10.30 to 10.40. Recess	10
10.40 to 11.30. Language and grammar (Mr. Dickinson.)	50
11.30 to 11.40. Recess	10
11.40 to 12.30. Mineralogy (Mr. Martin.)	50

Friday afternoon.

2.00 to 2.10. Questions by members	10
2.10 to 3.00. Reading, elementary and advanced (Mr. Walton.)	50
3.00 to 3.10. Recess	10
3.10 to 4.00. School government and moral instruction (Mr. E. A. Hubbard.)	50

PROGRAM FOR NOVEMBER 2 AND 3, 1882.

Wednesday evening, November 1.

7.30. Lecture by Col. Thomas Wentworth Higginson. Subject: How to study history.

Thursday morning.

	Minutes.
9.30 to 9.40. Opening exercises	10
9.40 to 10.30. Mineralogy (Mr. George H. Martin.)	50

Thursday morning.

10.30 to 10.40. Recess	10
10.40 to 11.30. Language, plan of teaching (Mr. Dickinson.)	50
11.30 to 11.40. Recess	10
11.40 to 12.30. Drawing (Mr. Charles M. Carter.)	50

Program for November 2 and 3, 1882—Continued.

Thursday afternoon.

	Minutes.
1.30 to 1.40. Questions proposed by members of the institute	10
1.40 to 2.30. Reading, elementary and advanced	50
(Mr. George A. Walton.)	
2.30 to 2.40. Recess	10
2.40 to 3.30. Method of assigning lessons and hearing recitations	50
(Mr. Dickinson.)	
3.30 to 3.40. Recess	10
3.40 to 4.20. Botany, elementary course	40
(Mr. Martin.)	

Thursday evening.

7.00. General discussions.

7.30. Lecture by Mr. Frank A. Hill, of Chelsea. Subject: The Mound Builders, with illustrations.

Friday morning.

	Minutes.
9.30 to 9.40. Opening exercises	10
9.40 to 10.30. Arithmetic: analysis, fractions, and percentage	50
(Mr. Walton.)	
10.30 to 10.40. Recess	10
10.40 to 11.20. Lessons in teaching color	40
(Mr. Dickinson.)	
11.20 to 11.30. Recess	10
11.30 to 12.20	50

Friday afternoon.

1.30 to 1.40. Questions by members	10
1.40 to 2.30. Geography; plan of topical teaching	50
(Mr. Martin.)	
2.30 to 2.40. Recess	10
2.40 to 3.30. Moral training and school government	50
(Mr. E. A. Hubbard.)	

PROGRAM FOR NOVEMBER 24, 1882.

Friday morning.

9.30 to 9.40. Opening exercises	10
9.40 to 10.30. Mineralogy	50
(Mr. George H. Martin.)	
10.30 to 10.40. Recess	10
10.40 to 11.30. Language, plan of teaching	50
(Mr. Dickinson.)	
11.30 to 11.40. Recess	10
11.40 to 12.30. Arithmetic: analysis, fractions, and percentage	50
(Mr. George A. Walton.)	

Friday afternoon.

1.30 to 1.40. Questions proposed by members of the institute	10
1.40 to 2.30. Geography, plan of topical teaching	50
(Mr. Martin.)	
2.30 to 2.40. Recess	10
2.40 to 3.30. Physics, elementary course	50
(Prof. I. J. Osbun.)	
3.30 to 3.40. Recess	10
3.40 to 4.30. Lesson in drawing	50
(Mr. Charles M. Carter.)	

Friday evening.

7.30. Lecture by George P. Gillman. Subject: Egypt and the Nile, with stereopticon.

The members are invited to ask questions and suggest difficulties.

The exercises, day and evening, are free to all, and the public are cordially invited to attend.

CIRCULARS OF INFORMATION

OF THE

BUREAU OF EDUCATION.

No. 3—1885.

A REVIEW OF THE REPORTS OF THE BRITISH ROYAL COMMISSIONERS ON TECHNICAL INSTRUCTION, WITH NOTES, BY THE LATE CHARLES O. THOMPSON, A. M., PH. D., PRESIDENT OF ROSE POLYTECHNIC INSTITUTE, TERRE HAUTE, INDIANA.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1885.

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LETTER.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., September 5, 1885.

SIR: The following paper, hereby recommended for publication, is a most valuable contribution to the literature of technical instruction in Europe, by the late Charles O. Thompson, A. M., PH. D., the accomplished president of Rose Polytechnic Institute, Terre Haute, Ind. The interest in the paper will be increased when it is known that it is the last contribution by this pioneer in technical instruction towards the solution of the educational problems in which he had become an acknowledged authority.

The paper takes the form of a review of the reports of the British Royal Commissioners on Technical Education. Dr. Thompson, on his second visit to Europe, made careful studies in many places where the Commission prosecuted their investigations most in detail. All information that he desired, whether from persons or institutions, was fully and freely furnished, a courtesy that he attributed in large measure to letters of introduction from this Office. On his return, he expressed a desire to place at the disposal of the Office such portion of the material he had gathered as might be suitable for its use. Being anxious to secure to American educators as far as possible the benefits of the investigations made by the British Commission, before mentioned, and having found its report too lengthy for republication, I suggested to Dr. Thompson that he should prepare a review of that report, with the addition of his own notes upon the leading points brought into view, respecting technical education in the several countries included in the work of the Commission.

Dr. Thompson's method and character as an educator are especially worthy of study. He was born at East Windsor, Conn., reared in a cultured and devout family, prepared for college by Paul H. Chadbourne, and graduated at Dartmouth, after four years of study, in 1856. Upon leaving college he became principal of the academy in Peacham, Vt., a position that he held until 1864, saving a short time when he was engaged as an engineer in the State of New York. Subsequently, he accepted the position of principal of the Arlington High School, Massachusetts.

During these years of active work as a teacher, he was ever on the alert to find the best in principles and methods; he studied their relation to administration, and he went beyond this in his efforts to comprehend the relation of the administration of education in states, cities, and institutions to the entire drift of human affairs. The Baconian methods had produced their effect in multiplying inventions. The trades and commerce were fairly under the influence of the new applications of steam and electricity. Society was going through a transition well-nigh approaching a revolution. Apprenticeship was rapidly disappearing, and home manufactures were giving place to large mills and manufactories, and yet the schools in which the young were to be specially fitted for their career in the new order of industries were in a large measure limited to the old in methods and principles. Here and there attention was given to the physical sciences, but their application to the arts and industries and the manual skill which these required were ignored in our systems of education. At this juncture the school at Worcester was founded by the benefactions of Boynton, Washburn, Salisbury, and others. These gentlemen, in council with Messrs. Hoar, Sweetser, and their associates, developed a carefully considered plan in which, without dependence for organization or direction upon the common school or university, young men were to be furnished an education in a separate school in which shop practice was to be an essential part. For the conduct of the new institution there was needed a man of well balanced mind, equally versed in the classics and the sciences, and prepared to accord to each its proper part in the training of the young. The choice fell upon Dr. Thompson. After eight months' study in Europe, he entered upon his duties as principal of the Worcester Free Institute. Under his direction the school became a marked success, and his views and counsel were widely sought. He participated prominently in the movement to introduce drawing into the public schools of Massachusetts, and so into the schools throughout the country.

After fourteen years of labor, marked with special success, in Worcester, he took his second trip to Europe, and immediately upon his return engaged himself in his new field of activity as president of the Rose Polytechnic Institute, Terre Haute. He died March 17, 1885, deeply mourned by a wide circle of family and educational associates, and worthily lamented wherever known.

Very respectfully, your obedient servant,

JOHN EATON,
Commissioner.

To the honorable SECRETARY OF THE INTERIOR.

Publication approved.

H. L. MULDROW,
Acting Secretary.

TECHNICAL INSTRUCTION IN EUROPE.

SCOPE OF THE REVIEW.

On the 25th of August, 1881, a commission was appointed by Queen
ctoria " to inquire into the instruction of the industrial classes of cer-
in foreign countries in technical and other subjects, and into the in-
ence of such instruction on manufacturing and other industries at
me and abroad." The persons named as members of the commission
re Bernhard Samuelson, F. R. S., Prof. Henry E. Roscoe, Philip Mag-
s, director and secretary of the City and Guilds of London Institute,
hn Slagg, esq., Swire Smith, esq , and William Woodall, esq. Mr.
lbert R. Redgrave was made secretary.

Their first or preliminary report appeared early in 1882 and was in
bstance republished in Circular No. 6, 1882, of the Bureau of Educa-
on. This report was confined to instruction in France.

The second report is now issuing in five thick octavos.[1] Two of
ese, containing the observations and the judgment of the commis-
on, have already been published; the remaining three volumes, soon
appear, will consist for the most part of evidence and statistical ta-
es, for which British reports are so justly celebrated.

The second volume contains (1) the report of Mr. H. M. Jenkins, F.
.S., secretary of the Royal Agricultural Society of England, who acted
subcommissioner for the express purpose of investigating the condi-
on of education in agriculture in North Germany, France, Denmark,
elgium, Holland, and the United Kingdom. (2) A report on technical
ucation in the United States and Canada, by Mr. William Mather, me-
anical engineer of Salford, Manchester, a volunteer commissioner.
) Notes on technical instruction in the United States, by the commis-
oners. This volume, with the exception of the notes, being devoted
agriculture, is to be reviewed apart.

The first volume presents the observations of the commissioners upon
e technical schools of Europe, with their conclusions, and is the im-
rtant book of the five. These most industrious gentlemen visited and
amined schools and educational institutions in sixty-three cities and
wns of France, Switzerland, Germany, Austria, Belgium, Holland,
l Italy, and by a subcommittee investigated the teaching of home
lustries in the Black Forest, Thüringen, and the Tyrol. In Great
itain and Ireland they inspected the state of technical instruction in
me twenty-five cities.

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[1] Eyre and Spottiswoode, London. Price, 3s. 6d. per vol.

Their attention was naturally concentrated upon three forms of technology: (1) the training of engineers and mechanics; (2) art education with reference to the industrial arts; (3) the training of workmen for textile manufactures.

The conclusions and recommendations of the commissioners, which are of the greatest value, have been published in the Report of the Commissioner of Education for 1882–'83, page cclxviii, and may be found in the appendix (F) of this circular.

It is proposed in this paper to extract from the mass of evidence presented by the commissioners the information it furnishes about the training of mechanical engineers and mechanics; *i. e.*, to endeavor to smelt this mass of ore and extract the metal.

On the important topic of workshop instruction the author will add his own notes, made in 1882, on the organization of the Imperial Institutes of Technology at St. Petersburg and at Moscow, Russia, because the British commissioners, for very good reasons, failed to visit these important institutions. He will also add such other notes as may be useful in amplifying the information drawn from the report.

CLASSIFICATION OF EUROPEAN TECHNOLOGICAL SCHOOLS.

All the European schools in which engineers or artisans are trained may be reduced to the following groups:

I. Polytechnic or technical high schools, in which the principles and practice of engineering are taught, sometimes with the aid of a workshop, but generally without it. The graduates aspire to be managing engineers of mines, railroads, manufacturing establishments, &c., each according to his special preparation.

II. Intermediate technical schools, subdivided into (1) general technical schools, (2) weaving schools, (3) industrial art schools. The general technical schools may be classified into (*a*) higher elementary technical schools, (*b*) secondary technical schools, (*c*) building and mining schools. The graduates of these schools expect to become foremen in shops and works, with the possibility of attaining to a manager's position.

III. Apprenticeship schools, for the training of skilled workmen.

IV. Evening schools, available for artisans. These are attended by men who during the day follow their craft. The Fortbildungsschulen, or continuation schools, belong in this category.

V. Trade and professional schools for women.

This classification may be still further simplified in relation to mechanical engineers, foremen, and artisans, and all schools devoted to their service will fall under one of the following heads: (1) polytechnic schools, with or without workshops; (2) secondary technical schools; (3) apprenticeship schools; (4) trade schools.

It is convenient to speak of these in order, and it is better to point out the actual organization, management, and results of one or two typical schools of each class than to rely upon a general description of the whole to convey to the reader a clear impression of technical education in Europe.

For admission, the Polytechnics require sometimes more than the equivalent of an American college course, as the École Polytechnique; sometimes, the equivalent of a full course at the Realschule, as at the German Polytechnics; sometimes, the best that the preparatory schools can give, as at the Imperial Institute of Technology at St. Petersburg. The range and severity of the requirements for admission gradually diminish till in the apprenticeship schools only the rudiments of knowledge are demanded.

The question whether the course at the Gymnasium or that at the Realschule is better as a preparation for the Polytechnic is now much discussed in Germany. It involves the great question of the value of the classical (Gymnasium) course as mental gymnastic as compared with the mathematical and scientific (Realschule) course.

Professor Hofmann is in favor of the Gymnasium training rather than that of the Realschule, but admits that the superiority of the classical men may be due in part to the fact that they are drawn from a class who, for several generations, have enjoyed superior culture. Dr. Victor Meyer, of Zürich, and many others of equal eminence, agree with Professor Hofmann; Professor Lunge, of Zürich, Professor Wislecenus, of Würzburg, and others as able, oppose him. The question must be left open for discussion.

The continuation schools (Fortbildungsschulen) are an admirable device for enabling artisans who by misfortune have missed any essential of an elementary education to recover their losses by attending classes for three hours a day, usually in the evening.

ISOLATION OF SCHOOLS FOR TECHNICAL TRAINING.

Whether technical education should be put under the wing of the university or be provided for in separate establishments is a question upon which great diversity of opinion exists.

Hofmann of Berlin, Victor Meyer of Zürich, Kühne of Heidelberg, and Piccard of the Bernoullianum at Basle are in favor of incorporating polytechnic and university training; Lunge of Zürich, Wislecenus of Würzburg, and others equally eminent oppose it. Quincke of Heidelberg holds that the function of the Polytechnic is to facilitate the transition from pure science to practice by means of lectures and laboratory work, but admits that the number of scientifically trained men sent out from the polytechnic schools of Germany has been in excess of the number of high class industrial positions open to them, so that polytechnic graduates have been compelled to take subordinate positions. He is, however, in favor of amalgamation.

But, conflicting as these opinions seem, the commissioners found the fact to be that in every country visited separate institutions have been established for technology and for pure training. Institutions devoted to the pursuit of knowledge for its own sake, and those devoted to its applications to industrial operations, do not as a matter of practical experience thrive equally well in the same atmosphere: the points of view are radically different in the two cases. At this moment there are in process of erection the magnificent Technological High School of Berlin, separate from the University, and the University of Strasburg—which it is purposed to make one of the grandest of German universities—in which no provision is made for a faculty of engineering and where the requirements of students in their future careers and the commercial aspects of problems are not considered at all.

PREFERENCE FOR PRACTICALLY TRAINED MEN.

As regards the kind of training that will best fit a youth to become the head of an industrial concern, opinions differ widely: but as to the value of the education given in the German polytechnics as a part of the training of engineers, most competent authorities on the Continent appear to agree.

It will be found that in every one of the old polytechnics, the notion prevails that if the brain be thoroughly trained, the hands will take care of themselves. This is the *old view* of higher technology.[1]

But it is a fact of the utmost importance that in the polytechnics of Germany, while there is accommodation for 6,000 students, the total attendance is little more than 2,000, and the annual cost to the State of each student exclusive of interest on the capital is $500. This state of things is only partially accounted for by the explanation which is sometimes offered that when these schools were built Germany consisted of several independent states which are now included in the Empire. Reference has already been made to the evidence that the increasing demand for men whose training has been largely practical, to fill stations of trust and responsibility, has lessened the demand for those of high but purely theoretical scientific attainments.

The commissioners found in Germany an excess of one thousand well-trained polytechnic graduates over the demand; and they were informed that the manager of a large engineering works had been so importuned by these young men for employment that he put up a notice in his window, "No polytechnic student need apply." The Baron von Eybesfeld, Austrian minister of instruction, told the writer that the most serious problem in education in that country is to reduce the number of theoretical engineers who, after their long course of study, found themselves not wanted, and to increase the number of men in whose training theory and practice had been so combined that they could meet the great demand for those who can put theory and practice together.

A study of the hour plans of the technical schools of all grades shows that the essentials of the highest polytechnic are the essentials of the lowest trade-school and of all between, but shortened or modified to meet the varying wants and capacities of each grade.

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[1] To give an idea of what the old polytechnic offers to students a complete exhibit of the work of the Dresden school is given in the appendix (C). This school is largely visited by American students of mechanical engineering, largely on account of the great fame of Dr. Zeuner, the director. An idea of the cost of maintaining the German polytechnics may be obtained from the appendix, section A, and a general view of education in Saxony from section B.

Everywhere drawing, mathematics, and physical science are taught; nearly everywhere language.

In the highest polytechnics, with the notable exceptions of St. Petersburg and Moscow, no handicraft appears on the hour plan ; in the lowest trade-schools, the craft and drawing usurp nearly all the time.

There is a constant and apparently irresistible tendency in all the lower schools to pass up into the higher by imperceptible advances. For example, at Chemnitz what used to be the Gewerbeschule has ranked since 1879 as a polytechnic school. But so true is it that a school of the higher education never loses or departs from the cast it receives in the first ten years of its existence, that the old polytechnics, modeled largely after the École Polytechnique of Paris, have so steadily held to the theoretical training of engineers that the times have swept past them. The efforts now making in Austria to remedy this evil are more to the point than any others in Europe, but they are directed towards the artisan rather than the engineer. We will return to this subject later.

THE RUSSIAN SYSTEM.

The *new idea* which appears here and there among the technical schools is to incorporate shopwork with the essential parts of the old courses. This has been done in three ways: (1) by mixing shopwork with the duties of each week, as at Moscow;[2] (2) by consolidating the shopwork in a year following the school course, as at St. Petersburg; (3) by requiring a certain amount of shopwork as a condition of admission to the school work, as at the Royal Foremen School of Chemnitz.

The Russians alone among European nations are entitled to the credit of attempting to reform the technical training of engineers and mechanics by mixing workshop instruction with other elements of the polytechnic course. Their success is remarkable. It adds great force to Russian examples and precedents to know why the polytechnic schools there are of such rare excellence. The popular impression of Russia does her great injustice. The educated Russians are highly educated and accomplished people. Part of this intelligence is due to the intermixture of the German population, which began soon after the death of Catherine and has continued to the present time; but the general truth remains.

Now, when they began about fifty years ago to attend to the development of their internal resources in a scientific manner, they started in the most sensible way, by sending commissioners to study the systems of technological education of Western Europe. These men winnowed Europe for ideas. These ideas they carried to Russia and expanded into schools which surpass in completeness of equipment and affluence of resources any in the other countries of Europe, with the possible exception of the École Polytechnique at Paris. Russian wealth gave German ideas of education great expansion and development.

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[2] There is force in the claim of those who advocate this plan, that the shopwork should be done prior to the age of 21 ; that is, at a period when, on account of the sharpness of the acquisitive powers, students are best able to profit by it.

Russia is the lee shore upon which the choicest educational pebbles may be gathered. In studying Russia one sees all European technological education epitomized; and the whole plan of the new education in Russia may be seen in the two schools of technology at St. Petersburg and Moscow. In each school is an ample, well equipped manufacturing machine shop where the students see good work done by skilled mechanics and are taught to do such work themselves; the course of study is otherwise substantially the same as in the German polytechnics. In each shop a definite number of hours of work are required of every student, with this difference in the plan, that at Moscow the shop work is *mixed with the duties of every week* of the six-year-course; at St. Petersburg it is consolidated into a fifth year, after all the school work of the four-year course has been finished. At Moscow no week passes without shop work; at St. Petersburg no shop work is done till the beginning of the fifth year, which year is wholly devoted to drawing and shop work. The two schools differ also in this, that at St. Petersburg all the students are externs, at Moscow about one-third are boarders.

The requirements for admission at St. Petersburg are more exacting than at Moscow, but the course is a year shorter; so that graduates of the two schools stand on about the same level, aspire to and compete for the same positions, viz, foremen, superintendents, engineers, &c., and achieve success in kindred fields. Substantially all the graduates of each school find satisfactory employment. This is specially true of the mechanics, who compose more than two-thirds of the entire number of graduates, on account of the greater demand for their services. At St. Petersburg the same fifth year of practical training is required of chemists, and the most ample provision is made for them.[1] For this there is no counterpart at Moscow.[2]

The chemists are taught the most important forms of applied chemistry as found in Russian industries. In the immense laboratories of applied chemistry, and under the control of the professor of chemistry, are a distillery, with a capacity of 1,000 gallons of alcohol a day; a dye-house, where the dyer—the best one in St. Petersburg—handles 100 pounds a day of woollen, cotton, and silk goods; a soda works, which yields 1,000 pounds of soda ash per diem; and a number of iron works, consisting of blast furnace, puddling ovens, Bessemer plant, and foundry, where several tons of iron a day are handled.

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[1] There is nothing in Europe comparable to it, outside the military schools, except the provisions for practice in the Mining School at Freiberg, Saxony.

[2] Civil engineers in Russia are all trained in the Government school which corresponds to the École des Ponts et Chaussées at Paris.

Every student who would graduate in chemistry at the end of the fifth year must take charge of these miniature factories in turn, with the foreman at his elbow, buy raw material, subject each step in the manufacturing treatment to test conditions, and account to the professor for everything.

The mechanics enter a shop, where they learn pattern making in the wood room, casting in the foundry, forging in the smithy, and iron working in the machine shop. A large collection of examples of students' work from this school in the museum of the Rose Polytechnic shows that they attain marvellous proficiency in each department.

The following facts concerning the Imperial Institute of Technology at St. Petersburg have never before been published, and serve to give a complete view of its interior working:

Area of floor space occupied by the students, 388,000 square feet.

Allotment of time spent with the professors, in hours, per week: First year: Free drawing, 4; linear drawing, 9; mathematics, 8; languages, 2; physics, 3; chemistry, 3; religion, 2; total, 31. Second year: Linear drawing, 4; mathematics, 12; language, 2; physics, 3; chemistry, 2; architecture, 5; total, 28. Third year: (*a*) Mechanics' section: Linear drawing, 8; mathematics, 11; mechanical technology, 5; total, 24. (*b*) Chemists' section: Linear drawing, 3; mathematics, 4; botany, 2; laboratory, 3; chemical technology, 13; total, 25. Fourth year: Mechanics' section: Linear drawing, 6; mathematics, 2; mechanical technology, 14; total, 22. Chemists' section: Linear drawing, 4; mechanical technology, 6; chemical technology, 13; total, 23.

The time required in preparation for these exercises, added to the totals just given, raises the weekly service of each student to an average of something more than 50 hours.

Fifth year: No recitations or lectures; linear drawing, 6; shop work for mechanics' section and laboratory work for chemists', 48; total, 54.

Weeks in school year, first four years: First semester, 16; second semester, 12; examination, 8; total, 36. Weeks in fifth year, 50.

Hence the mechanics spend 2,700 hours in shop work on consecutive days, and the chemists the same amount of time in the manufacturing laboratories.

Staff: Professors, 12; chaplain, 1; shop director, 1; lectors, 30; total, 44.

Number of students: First year, average, 125; fifth year, average, 90, or 72 per cent. of first year. Whole number at mid-year examination, 550. Average age of students at entrance, 17½ years.

Annual expenditure, in rubles:

Instructors	102,531	
Laborers	15,496	
Servants	8,000	
		126,027
Laboratory:		
Assistants	5,050	
Laborers	1,840	
Materials	9,376	
		16,266
Gas, fuel, and repairs		26,538
Board of indigent students		49,000
Workshop tools, and machinery		9,364
Library		2,140

Reading room	2,465
Museum	1,200
Miscellaneous	3,000
Total	236,000

Annual tuition: First four years, 30 rubles; fifth year, 40 rubles. In addition to these fees each student pays annually for two years a laboratory fee of 40 rubles.

This view of the Polytechnic at St. Petersburg may fairly enough conclude with the statement of the important fact that the new bridge over the Neva, the finest in Russia, was built under the superintendence of the Polytechnic engineers, and every piece of iron used in the structure was tested in the physical laboratory of the institution. This result, contrasted with the condition of the country forty years ago, when English, German, and American engineers were called upon to do Russian engineering, tends to confirm the judgment already given of the value of Russian technological education.

At Moscow the school training is substantially the same as at St. Petersburg, drawing being made a little more prominent; but the shop work is managed very differently. Great prominence is given to the manufacturing element in it. The first room into which the writer was shown, about 40 feet square, was occupied by drawing tables, where expert mechanics connected with the school were engaged in making projects and solving mechanical problems for different manufacturers in and about Moscow. This work results in orders from the manufacturers for machinery, which are filled in the workshops of the school. The sales of machinery in 1881 and 1882 amounted to 60,000 rubles annually, and this amount has increased since that time.

In the management of the workshop practice for the students there are one or two remarkable features. For the first three years, of 32 weeks each, the boys work 14 hours a week, or 1,344 hours; for the last three years, 10½ hours a week, or 1,008 hours. For convenience and for economy in the use of shop room and materials, wood work, forging, filing, &c., are taught during the first three years in separate rooms, the boys passing from one to another in turn. By this means that portion of the time in each boy's training during which he cannot produce much salable work is spent where he will waste as little as possible and advance to the producing stage of his apprenticeship as fast as possible. But during the last three years the apprentices mingle with a hundred workmen in the manufacturing business of the shop. The doors are always open, and the younger students have free access to the large shop in "off hours," so that the atmosphere of business envelops them all. But this isolation of the preliminary training is not complete. The writer saw in the smithy six forges for regular workmen standing opposite three for the students, and a steam hammer in this room was in almost constant use by the journeymen. In the foundry there are two connecting rooms; in one, which is quite small, the students were working on small moulds, while in the larger, students and journeymen together were handling large castings.

To give zest to the rather tedious work of the first three years the boys hear lectures on practical topics, such as the best cutting angle of files, the set of saw teeth, &c., which may not make them any better mechanics, yet tends to improve their general intelligence.

The only point in the place that strikes an American as arbitrary is that each squad of the younger boys must stay in each room of the elementary workshop a certain number of sessions, whatever its rate of advancement. Those who master the prescribed work are assigned better and better work of the same kind in the different rooms, and those who fall below the standard have no opportunity to "make up."

The following table sets forth the facts of the organization of the two schools in a convenient form:

	St. Petersburg.	Moscow.
Years in course	5	6
Weeks in year	*a*36 *b*50	32
Hours per week, each student	55	55
Total hours in shop work	2,700	2,352
Total hours in course	10,620	10,560
Number in entering class	125	80
Number at mid-year examination	550	400
Number of graduates annually	90	50
Number of workmen in shop	30	100
Total annual expenditure, rubles	236,000	250,000
Tuition, rubles	48	*c*150
Amount of annual sales from shop, rubles	3,000	60,000
Square feet of floor space	388,000	182,000

a First four years. *b* Fifth year. *c* Externs.

The kind of work done in these schools is generally the same; but there is rather more variety at Moscow. In the store-room of that school may be seen a great variety of machinists' tools, lathes, small hydraulic engines for watering lawns, hangers, face plates, drilling machines, &c. In 1882 an engine of thirty horse power was in process of manufacture, and the whole work, including the casting of the fly-wheel, was done on the premises.

There is a marked advantage in the consolidation of the shop work at St. Petersburg; but in weighing the two plans it is necessary to remember that the Government demands the diploma of the institute as a passport to the much coveted positions that lie in its gift, and the fifth year is indispensable to obtain the diploma. The practical difficulty of retaining the students after such a course as the school gives in the first four years, under different conditions, becomes at once apparent.

An American who would study technological education can use a part of his time to no better advantage than in becoming familiar with these two Russian schools. All the officers speak French and most of them German.

SECONDARY INSTRUCTION AT CHEMNITZ.

There is no polytechnic or technical high school where shop work is required as a preliminary condition of admission, but the Royal Foremen School at Chemnitz, of the secondary order, affords a good example of how this plan may be pursued. As this school forms part of an elaborate system for the complete technical training of the boys of a town which is wholly devoted to manufacturing, and as this system includes all the points in such training below the polytechnic, it will serve our purpose to state the outlines of this system.[1]

Chemnitz is a Saxon town of 90,000 inhabitants who are principally employed in the following establishments, viz: forty-six machine shops for machine building, 10 loom works, 3 hosiery frame factories, and 82 cotton, woollen, and silk mills. The manufacture of hosiery and gloves is the leading industry. The only locomotive works in Saxony, Hartmann's, is in Chemnitz, and employs about 2,000 men. The town is sometimes called the Manchester of Germany.

General education is assiduously cultivated and is of the most thorough sort; in fact, it is the strong foundation upon which technical schools securely rest. What a good common school education in Germany means is so well understood as to require no further comment. In 1878 the amount expended in municipal schools—that is, "common schools"—was $161,045; the number of teachers, 243; and the number of pupils, boys and girls, 11,400.

In addition to this, continuation schools are maintained in the evening, three hours each, for those who, through misfortune of any kind, have failed to secure the essential advantages of the public instruction. There were 993 of these Fortbildung scholars in Chemnitz in 1878.

Section B in the appendix gives statistical information concerning Saxon education.

Technical education in Chemnitz is conducted partly by the state and partly by corporations. The state has a group of schools, which are all in the new buildings on the Schiller Platz, completed in 1877. Here are 130 rooms with an aggregate area of 95,000 square feet, 652 students in attendance, and 52 instructors. The annual expense of maintenance in 1883 was $46,200, or $70.86 per student. The buildings cost $439,715. The same buildings and accommodations in Worcester, Mass., a city of about the same size and sort, would cost at least $700,000.

The state technical schools are the Higher Technical School, with 153 students; the Royal Building School, with 170 students; the Royal Foremen School, with 230 students; the Royal Drawing School, with 111 students; or a total, less 12 twice reckoned, of 652 students.

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[1] See "Technical Education in a Saxon Town." H. M. Felkin, London. C. Kegan Paul & Co., 1 Paternoster Square. Also report of commissioners.

Section D in the appendix shows the course of study in the Higher Technical School, which is now classed as a polytechnic. Most of the pupils stay till they have a certificate. They enter at 16 or 17 and leave at 21. Their military duty has to be then performed, after which, at the age of 22 or 23, they enter active life.

In connection with this school it is convenient, though a little out of place, to describe the method of preparing men for the building trades.

Pupils in the architectural course have an opportunity during the third year of attending the following classes in the Foremen School, viz: instruction in building mills for corn, sawing, powder, &c.; spinning and weaving; paper making; tool building; brewery mechanics; water works; fire extinguishing apparatus. They may also attend the modelling classes in the Royal Drawing School. The object of the architectural division is to educate men for ordinary builders. This object is kept clearly in view and gives special value to this school as a good place for artisans, because the Architects' Academy at Dresden provides a purely academic course, and the Chemnitz school must not clash with it.

The course at Dresden is of six years, and a young man is 25 or 26 years old before he can graduate there; add the year of military service and he becomes 26 or 27 before he begins his practical life. But when he is through he is competent to be an architect of monumental works and of buildings of artistic excellence. A student may pass, if he wishes, from Chemnitz to the second year at Dresden.

At the Royal Building School, which has a two-year course, those who can only learn the essentials of building receive a very good training and become expert and intelligent carpenters.

The Royal Foremen School proposes to give to future machinists, millers, dyers, tanners, &c, as well as to young men who intend to be foremen and managers in weaving and spinning mills, machine building establishments, &c., the opportunity of obtaining the theoretical knowledge required in their future careers. The instruction is comprised in three continuous "courses" each of half a year; and in this short time the pupils can acquire, of course, only what is absolutely necessary in their respective occupations. The instruction is given in two main divisions, the mechanical and the chemical. The students must have reached the age of 16 years on entering, and acquired the ability to read, write, and use the fundamental rules of arithmetic readily. And a very important, and indeed the controlling, condition of admission is that a student must have worked at least two years at his calling before entering. The practical working of the plan is this: a boy leaves the public school at 14; goes to some machine building establishment, for instance; attends in the evening a Fortbildungsschule (Continuation School); shows good parts; and at 16 finds himself in the Foremen School.

The following table shows the hours per week devoted to studies in each division of the Foremen School:

[A: Mechanical division. Michaelmas to Easter. B: Chemical division. Michaelmas to Easter. C: Mechanical division. Easter to Michaelmas. Half year.]

	First course.		Second course.		Third course.	
	A & C	B	A & C	B	A & C	B
Arithmetic	7	6	......	......	......	......
Geometry	5	4	......	......	......	......
Physics	4	4	2	2	......	......
Geometrical drawing	8	......	......	......	......	......
Freehand drawing	4	2	4	2	4	2
German language	4	4	4	4	2	2
General chemistry	......	12	......	......	......	......
Mathematics and mechanics	......	......	8	......	4	......
Machinery in general	......	......	2	......	6	......
Mechanical technology	......	......	4	......	......	4
Machine drawing	......	......	8	......	8	......
Surveying	......	......	4	......	......	......
Technical chemistry	......	......	......	6	......	6
Laboratory work, chemistry	......	......	......	12	......	20
Mineralogy	......	......	......	4	......	......
Bookkeeping	......	......	......	......	2	2
Architectural drawing	......	......	......	......	4	......

In addition, all students in the second and third courses may attend the special classes of the Technical High School.

The Royal Drawing School is an evening adjunct to the Chemnitz system, for teaching art in its various branches; and is attended by pupils drawn from all classes in the city.

To obtain a complete view of the extraordinary educational capital of Chemnitz, it is necessary to notice the Higher Weaving School (which occupies a building which costs $20,000 and is equipped with machinery for teaching every kind of machine weaving), the Agricultural School, the School for Hand Weavers, the Tailors' School, and the Trade Fortbildungs School, all maintained largely at private or corporation expense. There are also several special schools for girls. In short, for completeness in its provision for thorough preliminary training for every form of industry by which the inhabitants live, no town in Europe can surpass Chemnitz.

FRENCH SCHOOLS.

This view of the Continental methods of training foremen would not be complete without an allusion to the French École des Arts et Métiers at Châlons-sur-Marne. There are others of the same type in France, at Aix, Angers, and Lille, each having a fixed geographical limit. In each substantially the same plan is followed; but it will conduce to clearness to confine the description to that at Châlons-sur-Marne. The number of students is 285, all boarders; one-half are free, each of the other half pays $120 a year. The age of the students on entering is 16. The total annual budget is about $83,000, largely paid, of course, by the state. This makes the annual cost per pupil, including board, about $290. The school appliances, which are of an antiquated form, are being supplanted by machinery in accordance with modern demands, requiring an expenditure of $28,000 before the complete substitution can be accomplished.

The pupils daily spend 6 hours in school and 6¾ in the workshop; the school day is therefore 12¾ hours long, the weekly tale of hours 76½. Tools and machines made in the workshops by the students are sold each year and produce about $6,500.[1]

The pupils are admitted on the results of the examinations, a preliminary competitive examination in French, arithmetic, geometry, drawing, and manual work, and another at the school in other elementary branches and in general aptitude. Many of the large public schools have special preparatory classes for this school.

The 100 boys who enter each year are separated into two divisions of 50 each, one section going to a fitting shop, the other to a pattern shop; after six montns they exchange places. The same plan is pursued in the smithy and foundry.

In the fitting shop, which is divided into three sections, one of which corresponds with each year of training, there is a large plant, viz, an engine and boiler, which each student manages in turn for a week, a tool store, and abundant machinery. In the first year the students make squares, compasses, vises, &c.; in the second, detached portions of machinery and small machines; in the third they are employed in the production of machines for actual use in the institution or for sale.

The foundry contains three cupolas, one for heavy castings, say of thirty hundred-weight. The smithy has eight forges, at each of which two students work, taking turns as smith and striker. The pattern shop has places for 100 students, and is thoroughly furnished. In all the shops, besides the regular foremen, instructors, several mechanics are employed. The "fitter's shop" is preferred by the students, and in the third year 69 of them are found there, against 10 in the foundry, 7 in the smithy, and 8 in the pattern shop.

The discipline is of the most rigorous character; the students wear uniform, and are closely confined to the school, which they leave only at rare intervals under the charge of an instructor. To this military-like severity of discipline much of the success of the graduates is justly attributed.

It is fair to say that opinions differ in France respecting the merits of the students trained at these schools, though no one questions their great serviceableness. The complaint is that the graduates fail to appreciate the value of time and of materials as elements in practical work, and have a tendency to minute and artificial finish. It is found that they require some preparation by experience in actual business before they are competent to take full charge of work. This is quite natural.

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[1] The director of the excellent Ambachtsschool at Amsterdam says: "Experience shows that his being engaged on a bona fide piece of workmanship serves as a powerful stimulant to a pupil."

The commissioners ascertained, however, that nearly all the graduates of this school obtain positions in remunerative and honorable callings, being employed as draughtsmen in manufactories, chiefs of drawing offices, and directors of works and managers of shops.

A few become teachers of engineering, as M. Bocquet of la Villette; many have positions on railways; a very few remain workmen, or simply foremen. They generally enter works as workmen, but owing to their technical training rapidly rise to the position of foremen. The conclusion of the commissioners is no doubt justified that "in affording an education in which theory is not carried too far and is duly combined with laboratory practice and in some cases with workshop instruction, and in which, moreover, the scientific teaching is made to bear upon the principal manufactures of the districts, these higher technical schools [a grade below the German Polytechnics and the École Centrale of Paris] provide the kind of education that is best adapted to the various grades of managers of works."

This being the case, it is gratifying to know that these schools are increasing in number and influence in every European country. In the matter of attempting to provide some substitute for the extinct apprenticeship system, France clearly takes the lead. There are two distinct plans now in vogue: one to introduce manual instruction into the ordinary elementary schools; the other, to erect apprenticeship schools, sometimes called superior elementary schools.

The primary communal school of the Rue Tournefort was for a long time the only school in France in which trade-teaching was combined with other elementary education; now it has many imitators. It was started on its present footing in 1873. The school hours are from 8 in the morning to 6 in the evening, a free hour at noon and a half holiday on Thursday; and on Sundays the pupils from 9 to 12 and from 1 to 4 hear instructive or amusing lectures. The weekly tale of hours, excluding Sunday and the half holiday on Thursday, is 49. The number of hours spent in the shop is 18. Deducting this number from 49, we have 31, the time spent in school in the United States by primary and secondary pupils being about 30. It appears, then, that the French add the shopwork to the time spent in what may be called literary work. In the lowest class the children are six years old and receive three lessons a week, of one hour each, in handicraft. From ten years old and until graduation they have 18 hours in the shop. There are 360 children in this school, and they are generally able to earn on graduating, at the age of 13–15, about one dollar a week.

The studies of the school are drawing, modelling, moulding, and carving; arithmetic and geometry; geography and history; physics; anatomy, physiology, and hygiene; French reading and writing; and civil government, technology, and morals. The duties of the workshop are lathe and forge work, joinery, and a little higher machine work.

The reports of the inspectors tending to cast some suspicion on the quality of the literary work of this school, the authorities of the city of Paris, in their further experiments in the introduction of manual training into ordinary primary schools, have confined themselves to teaching more advanced drawing from models[1] and the use of ordinary tools for working wood and iron, without attempting to teach special trades. There are about fifty schools where these experiments are in progress. It is already apparent that the shopwork tends to concentrate along the lines of dominant French industries, and the effort to avoid teaching trades will not be very successful.

These schools must not be confounded with another sort, viz, the municipal apprenticeship schools, from which they are quite distinct, in respect to the age of the pupils, the course of study, and the end in view. The most famous of these is that in the Boulevard de la Villette, which has been in operation since December 8, 1872.

It is a day school designed to fit boys to be good artisans, and proves its success by pointing to the large number of its graduates who have been successful in the fields for which the school prepared them.[2] No pretence is made that the shopwork serves any educational purpose other than to teach the boys to use tools and machines. The hours are from 7 A. M. to 7 P. M., 6 days a week for three years, allowing two hours a day for meals and recreation. The boys enter at 14. During the first two years they work four hours in the school and six in the shops. In the third year, two in the school and eight in the shops. In the first year they are taught the nature and conversion of material; in the second, they pass to actual construction. In the first year the work is uniform for all; in the second, a trade must be chosen and followed.

In 1881–'82 there were 250 pupils; 107 in the first year, 81 in the second, and 62 in the third. The number of absentees did not equal 7 per cent. of the whole, and was mainly confined to the entering class. A considerable number leave at the end of the first year for many causes, usually because they are unfit for the work. Those who leave at the end of the second year generally find remunerative employment.

The annual cost of maintenance is about $15,000, or a little less than $60 per pupil. The trades taught at this school are shown in the following exhibit of the number of boys engaged in each for the last two years of the course:

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[1] In all the primary schools of Paris it is noteworthy that drawing is taught from models and casts rather than from flat examples and copies.

[2] M. Gréard, in his report on primary education, calls attention to the fact that of 74 graduates 69 have remained "loyal" to the profession taught them at the schools.

	Second year.	Third year.
Fitters	42	34
Smiths	5	2
Turners in metal	3	5
Carpenters and joiners	4	2
Pattern-makers	11	5
Wood-turners	0	0
Locksmiths	11	4
Electric apparatus makers	5	10
Total	81	62

The following schedule will show how the time of the boys is spent in the Paris Municipal Apprenticeship School:

Day.	Years.	7 to 8.	8 to 9.	9 to 10.	10 to 11.	11 to 12.
Monday	1	Study.	French.	Sketches.	Study.	English.
	2	"	Mathematics.	Study.	English.	Physics.
	3	"	Mechanics.	Chemistry.	Workshops.	
Tuesday	1	"	Technology.	Study.	Sketches.	Geography.
	2	"	History.	French.	Study.	Mathematics.
	3	"	Sketches and drawing.		Workshops.	
Wednesday	1	"	History.	French.	Study.	Mathematics.
	2	"	French.	Study.	Sketches and drawing.	
	3	"	Technology.	Mathematics.	Workshops.	
Thursday	1	"	Physics.	French.	Study.	English.
	2	"	Geography.	Study.	English.	Chemistry.
	3	"	Sketches and drawing.		Workshops.	
Friday	1	"	Chemistry.	Drawing.	Study.	Mathematics.
	2	"	Technology.	Study.	Sketches and drawing.	
	3	"	Study.	Mathematics.	Workshops.	
Saturday	1	"	Study.	Mathematics.	Study.	Descriptive geometry.
	2	"	Mechanics.	Study.	Descriptive geometry.	Mathematics.
	3	"	Physics.	Common law.	Workshops.	

Throughout the course:
12 to 1, lunch and recreation.
1 to 3½, workshops.
3½ to 4, meal and recreation.
4 to 7, workshops.

From 10 minutes to 10 until 5 minutes past 10 there is a quarter of an hour's recreation for all the boy

In addition to the municipal apprenticeship schools there are two othe sorts substantially of the same kind that are largely attended, viz: (1 apprenticeship schools, sustained by great corporations for the benefi children of their employés, of which a good example is that of Messrs. aix & Co., printers; (2) those conducted under the superintendence the Christain Brothers by a charitable association whose schools in the e de Vaugirard, at Issy, and at Igny, contain more than 2,400 pupils. The schools already mentioned do not in any case confine themselves a single trade. The Government sustains many simple apprentice-ip schools, the main effect of each being to foster some trade, as the tchmaking school at Cluses and the school of porcelain decoration Sèvres.

There is a large number of these schools in Europe, some supported the State and some by a corporation. To this category must be re-red the many Fachschulen, as at Iserlohn, for industrial art applied metal-work; one of the most interesting schools in Europe for jew-ers and goldsmiths, at Vienna; and one for drawing, modelling, and coration, including house painting, at Cologne. There are one hun-ed of these Fachschulen in Austria alone. In the Cologne school ere are two sessions a year, the winter session being the better at-ided, because the young men go to practical work during the sum-r months.

There is also a large number of weaving, dyeing, and industrial-art ools which fall a little outside the scope of this paper.

In all these institutions, while the craft is foremost, great attention paid to drawing, modelling, the elementary mathematics, and the ments of the physical sciences; while, as far as possible, evening ools are everywhere maintained, to remedy the deficiencies of the y schools or day scholars.

THE "COTTAGE INDUSTRIES" OF GERMANY AND AUSTRIA.

It remains to allude to the researches made by a subcommission, con-ting of Messrs. Magnus and Woodall, among the schools for foster- what are called "cottage industries." These are most numerous in Black Forest and in the South Austrian provinces. In the little lages such industries as clockmaking, straw plaiting, wood carving, ., which formerly flourished and afforded a comfortable living to the asants, are now on the decline; the various manufactures have passed o the control of the proprietors of small factories, who employ fewer n to do the same amount of work. The effort at reform consists in ablishing trade schools where modelling and drawing hold an im-tant place and in which the young people can learn new and attract- designs for their home-made wares, thus securing their sale. They o acquire the power of expressing their own ideas in designs, and so ain control of their own inventions.

The same idea is brought out in the pottery business, where the ex-lent instruction given at the Government Art School at Carlsruhe done much to provide improved models for the potters.

Perhaps there is no more interesting work now doing in technical education in Europe than that under the direction of Dr. Exner, one of the Austrian inspectors of schools. The zeal of the Austrian Government in assisting local effort in the matter of workshop instruction is remarkable, and the results are very satisfactory. The schools thus fostered may be arranged in two categories, viz: (1) those in which a sound theoretical instruction is imparted, of which there are few; (2) those where the greater part of the time is spent in the shops, and the school work consists mainly of drawing.

The first kind do not differ essentially from other Fachschulen, except in being more largely schools and less workshops. The second are full of promise for Austrian industries.

In carrying out this new policy the great Gewerbe-Museum at Vienna[1] has been organized and put in charge of Dr. Exner, a strikingly competent and efficient man. He has started two totally distinct sorts of schools. The first sort is substantially a half-time school, in which boys from the higher common schools work half the day and study the other half, receiving instruction according to the polytechnic plan as far as the time permits. The course being two years, these boys do not receive as much instruction as the polytechnic students, but they have the immense advantage of practical power in the shop, which secures them a living and adds to their value. Every stroke of work in the shops is done with reference to the sale of the articles, and no fact was mentioned oftener, or with more evident satisfaction by Dr. Exner in proof of the real excellence of the school than that they sold in the first year a thousand gulden worth of their work. It is intended to multiply these schools so that they shall provide a great variety of mechanical practice (the two now in operation being devoted wholly to wood working) and to extend the course to four years. The second line along which the Austrians are moving is in cultivating the cottage industries.

There is in Austria a marked tendency of the population to concentrate itself in large cities. The population of Vienna has grown from 800,000 to 1,200,000 within ten or twelve years, and other cities show a great increase. As this has occurred without a corresponding increase in the total population, the inference is that the growth of the cities is depopulating the villages. Inquiry into the causes of this movement has brought out the fact that the peasants of these villages have lost the market for their baskets and other wares because their Swiss and French neighbors, who have had abundant schools of industry, have devised new and more attractive forms for the same wares. The peasants of Austria were unable to compete because, through their ignorance of design, they were confined to the old and unsalable forms, and, with the fatuous haste so often seen, crowd the cities in the vain hope of bettering their lot. Dr. Exner, under the general direction of the wise and acute minister of public instruction, has started many trade-schools, especially schools for basket-weaving which is by far the most important of these household industries. Half of the day is devoted to learning new and better ways of basket-weaving, and half to drawing and modelling in clay; the result being that the pupils learn how to do the things that are now in demand and are clothed with power to design whatever forms the future may suggest. Anybody may attend these schools who chooses to come to Vienna; for there only can a museum of examples be gathered sufficiently ample to enable the minister to multiply the schools so as to provide for other industries as well as basket-weaving. The hope is that the more intelligent young peasants will attend these schools and carry back to their villages the new ideas; this being done, a check will be put upon the tendency of people to leave the villages, because they can again be prosperous and happy where they are.

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[1] The object of the Museum is to collect examples of the best products in every trade for purposes of instruction.

A valuable comment upon the relative merit of these two plans is made by Signor Tamanini, who founded the school at Tione for wood-working. The school is now at Riva. He says that he is opposed to the creation of simple workshops without the provision of theoretical instruction; that he has been thoroughly conversant with both kinds and nothing really lasting can be accomplished unless school and shop training go hand in hand. Experience alone can determine this. Dr. Exner cites facts of the most convincing character to show that the immediate effect of the mere trade schools has been precisely what was hoped and expected, namely, to revive drooping industries and to make new ones.

For instance, it was found that the people of Southern Tyrol were consuming olive-wood for fuel, while their neighbors in Italy were manufacturing from it numerous useful articles. A Fachschule was established at Arco about eight years ago, with shops for wood-turning and inlaying. The result is that the former master of the school, Signor C. Emert, is now proprietor of a factory where thirty work people are employed, and the olive-wood work of Arco is in great demand all over the world. Signor Emert informed the commissioners that he had an order from Boston, Mass., for 1,500 blocks of olive-wood.

In conclusion, it is well to remark that of all technical schools in Europe, those which have most powerfully affected manufactures are the ones devoted to industrial art; but none have been more prosperous or more fruitful in results than those devoted to the welfare of mechanics.

Under section E of the appendix some facts are given which cannot be easily obtained in Europe, which tend to show that the progress of technical education in the United States has not withdrawn any force from the old classical education, but has rather tended to stimulate public interest in all kinds of education.

APPENDIX.

A.—*Table showing expense of maintaining the German Polytechnic Schools for* 1883, *in United States currency.*

Name.	Government contribution.	Total expense.
Aix la Chapelle	....	$33,178
Brunswick	....	43,305
Carlsruhe	$54,400	63,500
Darmstadt	35,870	39,500
Hanover	....	62,750
Munich	....	100,661
Stuttgart	....	68,894
Berlin	....	54,563
Dresden	63,526	76,232
Chemnitz	38,500	46,280
Total	....	588,723

B.—*Summary of all the schools in Saxony under the Minister for Education and Cultus, in December,* 1878.

		Number of schools or institutions.	Number of pupils and scholars.	Number of classes.	Number of teachers.	Amount of teachers' salaries.	Total amount of expenses of schools.	Amount of State aid.
1	University (Leipsic)	1	3,172	....	165	$113,815	$291,251	$169,584
2	Polytechnic (Dresden)	1	672	....	43	39,087	66,156	56,662
3	Gymnasiums	13	4,063	147	284	218,179	326,249	95,574
4	Realschulen of Class I	12	3,525	151	239	197,170	191,750	42,498
5	Realschulen of Class II	20	2,884	131	215	108,700	158,170	39,214
6	Seminaries	18	2,600	114	209	156,235	239,158	211,516
7	Institute for Drawing, Gymnastic, Teachers	1	14	....	4	1,858	3,580	2,491
8	Higher Girls' School (sanctioned)	2	754	27	35	18,950	27,220	....
9	Amount of pension granted to teachers of higher schools	......	......	......	......	....	22,888	(*a*)
10	Higher (secondary) private schools	4	645	39	63	?	?	?
11	Fortbildungsschulen	1,866	68,604	2,621	6,820	*b*2,961,923	*b*3,436,963	324,278
12	Public elementary schools	2,134	451,324	9,668				
13	School at Bodenbach	1	69	2				
14	Special seminary schools	17	1,919	69	....	....	....	....
15	Deaf and dumb institutions	2	301	25	39	18,758	44,548	35,364
16	Private elementary schools	99	7,575	?	596	?	?	-
17	Private Fortbildungsschulen	10	1,251	?				....
18	Private teachers and governesses in houses	.....	......	......	88	?	....	....
		4,201	549,372	12,985	8,860	3,834,675	4,807,933	977,181

a Included in 11-13.

b Excluding the salaries and expenses of the Deaf and Dumb Institute, but including the pensions to teachers in the higher and elementary schools from the State.

C.—*Plan of studies in the Polytechnic School at Dresden, Saxony.*

every lecture offered in this plan will be given to a division consisting of but nt; and any one will be given to a division of three. In fact, however, di- small as three seldom occur, and almost the entire list of exercises is given. Many American students attend the lectures, especially Dr. Zeuner's ics and Professor Hempel's in Chemistry.

-The daily sessions are from 8 A. M. to 8 P. M.

MECHANICAL DEPARTMENT.

FIRST COURSE: FOR MECHANICAL ENGINEERS.

First semester (summer).

	Hours per week.
l geometry of two dimensions	3
ons of elementary mathematics	2
ntal physics (optics and acoustics)	5
ntal chemistry	6
nd coloring	2
and mechanical drawing	4
al drawing	6

Second semester (winter).

l geometry of three dimensions	3
al and integral calculus, with practice	5
re geometry, with practice	8
ntal physics (heat, electricity, magnetism)	5
echanical technology	3
re, with practice	6
drawing	2

Third semester (summer).

al and integral calculus, with practice	5
mechanics (geostatics, elements of graphical statics)	5
re geometry, with practice	8
echanical technology (continuation)	3
re, with practice	6
drawing	2

Fourth semester (winter).

elasticity and stability	3
mechanics (geodynamics, hydromechanics)	5
ience of machinery	3
al construction of machines (rigid joints, elements, and parts)	5
construction of machines	10
y	2
al political economy	2

Fifth semester (summer).

machines (hydraulic motors)	4
al theory of heat	3
hydraulics	3
ience of machinery	3
al construction of machines (elements and parts)	5
construction of machines	10
political economy	2

Sixth semester (winter).

Hours a week

Theory of engines (steam and air engines)
Theoretical construction of machines, traction engines and hydraulic motors (alternating with the steam-boiler and the steam-engine). This subject is also for the eighth semester
Theoretical construction of machines, construction of steamboats (every second year). Also for the eighth semester
Practical construction of machines
Kinematics
Locomotives and steamboats (alternating with the theory of pumps and ventilators). Also for the eighth semester
Theoretical construction of machinery for railroads (equipment of railroad depots)
Electro-technical machines
Machines for forging iron

Seventh semester (summer).

Theoretical construction of machines, traction engines and hydraulic motors (alternating with the steam boiler and the steam engine). Also for the ninth semester
Theoretical construction of machines, construction of steamboats (every second year). Also for the ninth semester
Practical construction of machines
Kinematics, with practice
Regulators (every second year). Also for the ninth semester
Theoretical construction of railroad machinery. Locomotives
Manufacture of flour (alternating with tool machinery). Also for the ninth semester
Machines for forging iron

Eighth semester (winter).

Locomotives and steamboats (alternating with theory of pumps and ventilators). Also for the sixth semester
Theoretical construction of machines, boiler and steam engine (alternating with traction engines and hydraulic motors). Also for the sixth semester
Theoretical construction of machinery, construction of steamboats (every second year). Also for the sixth semester
Practical construction of machines
Mechanism of working machines
Practice in kinematics
Iron bridges and roofs, with practice

Ninth semester (summer).

Theoretical construction of machines, boiler and steam engine (alternating with traction engines and hydraulic motors.) Also for the seventh semester.
Theoretical construction of machines, construction of steamboats (every second year). Also for the seventh semester
Practical construction of machines
Manufacture of flour (alternating with tool machinery). Also for the seventh semester
The dynamometer
A review of the requirements for the State examination
Law and administration

SECOND COURSE: FOR FACTORY ENGINEERS.

First semester (summer).

	Hours per week.
l geometry of two dimensions	3
ns of elementary mathematics	2
ntal physics (optics and acoustics)	5
ntal chemistry	6
nd coloring	2
and mechanical drawing	4
al drawing	6

Second semester (winter).

l geometry of three dimensions	3
al and integral calculus	4
e geometry, with practice	6
ntal physics (heat, electricity, magnetism)	5
hemistry	6
echanical technology	3
drawing	2

Third semester (summer).

al and integral calculus (continuation)	4
mechanics (geostatics)	5
e geometry, with practice	6
echanical technology (continuation)	3
chemistry	12
l drawing	2

Fourth semester (winter).

mechanics (geodynamics, hydromechanics)	5
elasticity and stability	3
al construction of machines (rigid joints, elements, parts)	5
eory of machines (reducing, separating, and mixing apparatus)	3
(alternating with weaving). Also for the sixth semester	3
ure of paper (every second year). Also for the sixth semester	2
y	2
chemistry	12

Fifth semester (Summer).

al construction of machines, elements and parts	4
construction of machines	4
ure of flour (alternating with tool-machines). Also for the seventh r	3
d embroidering machines (alternating with finishing machines)	1
chemistry	4

Sixth semester (Winter).

(alternating with spinning). Also for the fourth semester	3
ure of paper (every second year). Also for the third semester	2
m and construction of working machines	2
s for working iron	2
rrangements for working iron (every second year)	1

	Hours per week.
Technical chemistry	3
Metallurgy	2
Practical organic chemistry	8
Public hygiene	2
Theoretical political economy	2
Elements of the science of finance and of finance statistics	1

Seventh semester (summer).

Tool-machines (alternating with the manufacture of flour). Also for the fifth semester	3
Apparatus for working iron (continuation)	2
Heating arrangements for working iron (every second year)	2
Practical technology	4
Dynamometer	1
Practical political economy	2
Industrial administration. Also recommended in the third semester	1
Practical physics	12

ENGINEERING DEPARTMENT.

FIRST COURSE: FOR BUILDING ENGINEERS.

First semester (summer).

Analytical geometry of two dimensions	3
Applications of elementary mathematics	2
Experimental physics (optics and acoustics)	5
Experimental chemistry	6
Technical drawing for engineers	6
Plotting in black	2
Ornamental drawing	6

Second semester (winter).

Analytical geometry of three dimensions	3
Differential and integral calculus, with practice	5
Descriptive geometry, with practice	8
Experimental physics (heat, electricity, magnetism)	5
General mechanical technology	3
Topographical drawing	4

Third semester (summer).

Differential and integral calculus, with practice	5
Descriptive geometry, with practice	8
Geometry of position	4
Technical mechanics (geostatics, elements of graphical statics)	5
General mechanical technology	3
Plotting in colors	4
Surveying	4

Fourth semester (winter).

Technical mechanics (geodynamics, hydromechanics)	5
General science of machines	3
Theoretical construction of machines (elements and parts)	3
Practical construction of machines	4

	Hours per week.
elasticity and stability	3
re, with practice	6
ith practice	7
drawing	2
n of machines (every second year). Also for the sixth semester	2
Fifth semester (summer).	
ydraulics	3
ence of machines	3
e, with practice	6
every second year). Also for the seventh semester	2
f railroads (every second year). Also for the seventh semester	2
eodesy	8
ating (see remark at the end of second course)	—
Sixth semester (winter).	
reservoirs	4
reservoirs	4
perstructures	2
east squares (alternating with geodesy). Also for the eighth semes-	2
neralogy	4
y	2
lesy	4
n of machines (every second year). Also for the fourth semester	2
n of streets (every second year). Also for the eighth semester	2
n railroad architecture	6
Seventh semester (summer).	
tatics	2
an works, tunnels, stone bridges	4
f subterranean works and of bridges	9
railroads (every second year). Also for the fifth semester	2
lesy and spherical astronomy (every second year). Also for the ninth	4
on	4
	4
excursions	4
very second year). Also for the fifth semester	2
ating (see remark at the end of second course)	—
Eighth semester (winter).	
s and roofs	4
dges and scaffolds	2
of bridges	10
least squares (alternating with geodesy). Also for the sixth semes-	2
desy	4
n of streets (every second year). Also for the sixth semester	2
of railroad stations	3
political economy	2
Ninth semester (summer).	
n of railroads (stations)	3
f railroad structures	10
n of bridges, with practice	4

	Hours per week.
Higher geodesy and spherical astronomy (every second year). Also for the seventh semester	4
Practical political economy	2
A review of the requirements for the State examination	—
Law and administration	3

SECOND COURSE: FOR CIVIL ENGINEERS.

First semester (summer).

Analytical geometry of two dimensions	3
Applications of elementary mathematics	2
Experimental physics (optics and acoustics)	5
Experimental chemistry	6
Technical drawing for engineers	6
Plotting in black	2

Second semester (winter).

Analytical geometry of three dimensions	3
Differential and integral calculus, with practice	5
Descriptive geometry, with practice	8
Experimental physics (heat, electricity, magnetism)	5
General mechanical technology	3
Topographical drawing	4

Third semester (summer).

Differential and integral calculus, with practice	5
Descriptive geometry, with practice	8
Geometry of position	4
Technical mechanics (geostatics, elements of graphical statics)	5
General mechanical technology	3
Plotting in colors	4
Surveying	4

Fourth semester (winter).

Technical mechanics (geodynamics and hydromechanics)	5
Architecture, with practice	6
Geodesy, with practice	7
Method of least squares (alternating with geodesy). Also for the sixth semester.	2
Geodetical drawing	4
Construction of streets (every second year). Also for the sixth semester	2

Fifth semester (summer).

Practical hydraulics	3
Architecture, with practice	6
Practical geodesy (1 day)	8
Higher geodesy and spherical astronomy (alternating with the locating of railroads). Also for the seventh semester	4
Dioptrics (every second year). Also for the seventh semester	2

Sixth semester (winter).

Method of least squares (alternating with geodesy). Also for the fourth semester	2
Higher geodesy	4

	Hours per week.
General mineralogy	4
Lithography	2
Practical physics	4
Reservoirs	4
Construction of streets (every second year). Also for the fourth semester	2

Seventh semester (summer).

Higher geodesy and spherical astronomy (alternating with the location of railroads). Also for the fifth semester	4
Triangulation	8
Geology	4
Geological excursions	4
Practical physics	4
Dioptrics (every second year). Also for the fifth semester	2
Subterranean works, with practice	3
A review of the requirements for the state examination.	
Law and adminstration	3
Work in locating (in September of the years expressed by uneven numbers, practical geodetical work takes place. Those students can undertake this work who have heard the lectures upon locating and the first course upon geodesy and have taken part in practical geodesy.)	

ARCHITECTURAL DEPARTMENT.

First semester (summer).

Applications of elementary mathematics	2
Analytical geometry of two dimensions	3
Differential and integral calculus	5
Form and style of buildings (every second year). Also for the third semester	2
Technology of structures (every second year). Also for the third semester	3
Chemistry	6
Physics	5
Drawing (building forms)	6
Ornamental drawing	6

Second semester (winter).

Applications of differential and integral calculus, practice	2
Analytical geometry of 3 dimensions	3
Descriptive geometry, with practice	8
Architecture, with practice	6
Drawing (building forms)	4
Science of measure	2
Geodetical drawing	2
Physics	5
Ornamental drawing	6

Third semester (summer).

Descriptive geometry, with practice	8
Technical mechanics (geostatics, elements of graphical statics)	5
Architecture, with practice	6
Technology of structures (every second year.) Also for the first semester	3
Form and style of buildings (every second year). Also for the first semester	2

	Hours per week.
Drawing (building forms)	6
Ornamental drawing	6
Geodetical drawing	2
Practical geodesy	4
Fitting up of buildings	2

Fourth semester (winter).

Elasticity and stability	3
Special building construction, with practice	8
Fitting up of buildings	2
Designing of buildings	10
Designing of ornaments	10
Petrography	2

Fifth semester (summer).

Designing of buildings	15
Ornamental designing	10
Figure drawing	2
History of architecture. Also for the seventh semester	2
Practical esthetics. Also for the seventh semester	2
Heating and ventilation (alternating with estimation of cost and management of construction). Also for the seventh semester	2

Sixth semester (winter).

Designing of buildings	15
Designing of ornaments	10
Figure drawing	2
History of architecture. Also for the eighth semester	2
Practical esthetics. Also for the eighth semester	2
General history of art. Also for the eighth semester	2
Public buildings and parks	2
Aquarelle painting	4

Seventh semester (summer).

Work in the studio (practice in composition)	20
Ornamental designing, with figure drawing	6
Designing of colored decorations	2
History of architecture. Also for the fifth semester	2
Practical esthetics. Also for the fifth semester	2
General history of art. Also for the ninth semester	2
Public buildings and parks	2
Heating and ventilation (alternating with estimation of cost and management of construction). Also for the fifth semester	2
Aquarelle painting	4

Eighth semester (winter).

Work in studio (practice in composition)	20
Ornamental designing, and figure drawing	6
History of architecture. Also for the sixth semester	2
General history of art. Also for the sixth semester	2
Aquarelle painting	4

Ninth semester (summer).

	Hours per week.
ıdio (practice in composition)	20
l designing, with figure drawing	6
of colored decorations	2
tory of art. Also for the seventh semester	2
ainting	4
f the requirements for the State examination, law and administra-	3
ws	2

CHEMICAL DEPARTMENT.

First semester (summer).

lectures	6
tics and acoustics)	5
s of elementary mathematics	2
and integral calculus	5
ıorganic chemistry	12
nd technical drawing	4

Second semester (winter).

mistry	6
at, electricity, magnetism)	5
s of differential and integral calculus, practice	2
chanical technology	3
organic chemistry (qualitative and quantitative analysis)	20
ory of machines	3
nd technical drawing	4
e, with practice	6

Third semester (summer).

hnical chemistry (inorganic division)	4
chanical technology	3
organic chemistry (quantitative analysis and titration methods)	20
ory of machines	3
e, with practice	6

Fourth semester (winter).

hnical chemistry (organic division)	3
	2
and crytallography	4
ganic chemistry	20
ıysics	3
oduction to botany	4
ogy (vertebrates and invertebrates)	4
microscopic zoötomy	2

Fifth semester (summer).

s	1
th minerals and rocks	3
ganic chemistry	20
ıysics	3-4
	4

	Hours per week.
Geological excursions	4
Practical botany, with the microscope	4
General zoölogy	3

Sixth semester (winter).

Theoretical political economy	2
Practical organic chemistry	20
Petrography	2

Seventh semester (summer).

Selected chapter from the department of organic chemistry	2
Practical political economy	2
Practical inorganic or organic chemistry, according as the student wishes to make a specialty of one or the other department	20

D.—*Table showing number of hours per week in the course of instruction in the Technical High School, or Polytechnicum, at Chemnitz.*

[A—The division of mechanics; B—The division of chemists; C—The division of architects.]

FIRST COURSE: THREE HALF YEARS.

	Summer (first half).	Winter (second half).	Summer (third half).
German language	A, B, C 3	A, B, C 3	A, B, C 3
Descriptive geometry	4	4	..
Mathematics	8	8	7
Physics	4	4	4
General chemistry	4	4	2
Freehand drawing	4	A 4	
Art of building and architectural drawing		B 6	A, B 6
Preparatory exercise in architectural drawing	C 4		
Instruction in building materials	2		
Freehand drawing		C 4	C 4
Art of building and architectural drawing		4	4
Construction of buildings		4	6
Descriptive geometry			A, C 4
Colored drawings of machines and geometrical bodies			A 4
Practical geometry			½ day
General chemistry			B 4
Practical chemical work in laboratory			8
The following subjects, though not obligatory, are taught in the three divisions:			
Geography	3	3	
History			3
Mercantile arithmetic			2
French	3	3	3
English	3	3	3

D.—*Table showing number of hours per week in the course of instruction, &c.*—Continued.

SECOND COURSE: TWO HALF YEARS.

	Winter (first half year).	Summer (first half year).
German language and literary history	A 2	A 2
Physics	B 2	B 2
Chemical technology	C 2	C 2
Mathematics	A 8	A 8
Descriptive geometry	C 4	C 4
Mechanics	A 4	A 4
Machine drawing	6	6
Practical geometry	2	*a*4
Technological chemistry (inorganic)	B 2	B 2
Analytical chemistry	2	......
Practical chemistry (working in laboratory)	16	10
Mineralogy	4	......
Mechanics	2	4
Machine drawing (parts of machines and models)	2	4
Mechanics of the construction of buildings	C 2	C *b*2
Art of building	2	......
Designing plans of buildings	8	10
Freehand drawing	2	2
Styles of architecture (columns, &c)	2	......
History of architecture	2	......
Railways, roads, and waterworks (aqueduct construction)	....	2
Practical geometry	....	½ day.
The following subjects are non-obligatory in the three sections:		
History	3	3
Bookkeeping and correspondence	2	2
French	3	3
English	3	3

a Art of machine building. *b* Science of mechanics.

THIRD COURSE: TWO HALF YEARS.

	First half (hours per week).	Second half (hours per week).
For all pupils, A, B, and C:		
German language	**2**	**2**
Mechanical technology	**4**	**4**
For A and B:		
Political economy	**4**	**4**
Metallurgy	**2**	....
For A alone:		
Mathematics continued to analytical geometry	**4**	**4**
Mechanics	**2**	....
Art of building machines	**4**	**4**
Machines of various kinds	**4**	**4**
Construction of machines and plans of parts and the whole	**12**	**12**
For B alone:		
Physics	**2**	....
Technological chemistry (organic)	**2**	**4**
Practical chemistry, work in laboratory	**16**	**16**

D.—*Table showing number of hours per week in the course of instruction, &c.*—Contin

THIRD COURSE: TWO HALF YEARS—Continued.

	First half (hours per week).	Secon (hour wee
Machine drawing	2	
Machinery in general	4	
For C alone:		
"Propaideutik" of political economy	2	......
History of sculpture and painting	1	......
Legal building regulations	1	......
Heating and ventilation	2	......
Freehand drawing	2	......
Decorative ornamentation	4	......
Preparation of estimates	2	......
Designing plans of buildings	14	......
Non-obligatory subjects:		
French	2	
English	2	

E.—*Statistics showing the number of students receiving a classical education.*

The catalogues of nine colleges in the United States, viz, Yale, Harvard, iams, Amherst, Dartmouth, Bowdoin, Trinity, Lafayette, and Princeton, show the average number in the senior classes between 1870–1876 was 63; between 1882, 72. This reckoning excludes students in the scientific courses.

Between 1870 and 1882 the number of institutions in which a high classical e tion is offered increased amain; and the reports of the Commissioner of Edu show that there were in 1872, 13,836 male students in these courses; in 1882, 1

F.—*Conclusions of the Royal Commissioners.*

ılnable Report of the Royal (English) Commissioners on Technical comes in while my report is in press, and it seems best to substitute the of the commissioners for other subjects. They are as follows:

PROGRESS OF MANUFACTURE ABROAD.

ıve been seen from the preceding pages of this report that we have at- ıiderable relative importance to that portion of our commission which di- ı inquire into the condition of industry in foreign countries; and it is our ıte that, although the display of continental manufactures at the Paris al Exhibition in 1878 had led us to expect great progress, we were not r so remarkable a development of their natural resources, nor for such perfec- r industrial establishments as we actually found in France, in Germany, in ıd in Switzerland. Much machinery of all kinds is now produced abroad ish and in efficiency to that of this country, and we found it in numerous pplied to manufactures with as great skill and intelligence as with us.

branches of industry, more especially in those requiring an intimate ac- with organic chemistry, as, for instance, in the preparation of artificial coal tar, Germany has unquestionably taken the lead.

ıduction by Solvay, of Brussels, of the ammonia process for the manufact- , and the German application of strontia in sugar refining constitute new in those arts. In the economical production of coke we are now only ıwing in the footsteps of our continental neighbors, while the experiments ə been carried on for nearly a quarter of a century in France for recover- and ammonia in this process have only quite recently engaged our atten-

ilation of deep mines by means of exhausting fans was brought to perfec- ium earlier than with us, and although our methods of sinking shafts served ɜars as models for other countries, improvements thereon were made abroad ıre now adopting with advantage.

ıdant water power in Switzerland and in other mountainous districts is motive purposes by means of turbines perfect in design and execution.

truction of the dynamo-machine by Gramme gave the first impulse to the of electricity for lighting and to the various new applications of that ı appear likely to exercise so great an influence upon the industry of the l in all these applications at least as much activity is exhibited on the s with us.

onstruction of roofs and bridges, more especially in Germany, accurate ɜal knowledge has been usefully applied to the attainment of the neces- ty with the least consumption of materials.

ırinted cottons of the highest class, produced at Mulhouse from Parisian de- ot excelled, and rarely equalled, in this or in any other country, although e between our general productions in this department and those of Alsace r so great as it was ten or twenty years ago. The soft, all-wool fabrics and Roubaix are scarcely equalled as yet on the average by those of specially as respects the dyeing.

ng and finishing is still as much the specialty of Lyons as is the produc- beautiful silk fabrics on its hand looms, for which it has so long been pre-

rt from Verviers to Scotland of woollen yarns, carded and spun by ma- de in England, from South American wool formerly purchased in Liver- ondon, but for which Antwerp is now becoming the chief market, is an an intelligent, careful, and persevering attention to details having estab- ·cial trade which the cheaper labor of the Belgian factories now assists ıg.

ın trade of Basle, that in velvets and silks of every kind at Crefeld and in ·ics at Chemnitz, are examples of recently established or transformed in- ıich have rarely been excelled in boldness of enterprise and in success by f the same kind accomplished in our own country. And it may not be im- mention here that in whatever degree the technical instruction of our rivals may have trained them for competition with ourselves in their own, and to some extent in our home markets, much of their success is due to taking, more pliancy, and greater thrift; and also to the general cultiva- ıowledge of modern languages, and of economic geography usually pos- ontinental manufacturers.

NEW DEPARTURES AT HOME.

t as has been the progress of foreign countries and keen as is their rivalry many important branches, we have no hesitation in stating our conviction, which we believe to be shared by continental manufacturers themselves, that, taking the state of the arts of construction and the staple manufactures as a whole, our people still maintain their position at the head of the industrial world. Not only has nearly every important machine and process employed in manufactures been either invented or perfected in this country in the past, but it is not too much to say that most of the prominent new industrial departures of modern times are due to the inventive power and practical skill of our countrymen. Among these are the great invention of Bessemer for the production of steel in enormous quantities, by which alone, or with its modification by Thomas and Gilchrist, enabling the commonest description of iron to be used for the purpose, steel is now obtained at one-tenth of the price of twenty years ago; the Weldon, Hargreaves, and Deacon processes, which have revolutionized the alkali trade; the manufacture of aniline colors by Perkin; the new processes in the production of silk fabrics by Lister; the numerous applications of water pressure to industrial purposes by Armstrong; the Nasmyth steam hammer; the compound steam engine as a source of great economy of fuel; and the practical application of electricity to land and submarine telegraphy by Cooke, Wheatstone, Thomson, and others.

Machinery made in this country is more extensively exported than at any former period. The best machines constructed abroad are, in the main, and with the exceptions which we have named, made, with slight, if any, modifications, after English models. A large proportion of the power looms exhibited and used in the continental weaving schools has been imported from this country. In the manufacture of iron and steel we stand preëminent, and we are practically the naval architects of the world. Our technical journals, such as those of the Institutes of Civil and Mechanical Engineers and of the Iron and Steel Institute, are industriously searched and their contents assimilated abroad.

In those textile manufactures in which other nations have hitherto excelled us, as in soft, all-wool goods, we are gaining ground. We saw at Bradford merinos manufactured and finished in this country which would bear comparison in texture and in color with the best of those of the French looms and dye houses, and in the delicate fabrics of Nottingham and Macclesfield (thanks, in great measure, to their local schools of art) we no longer rely on France for designs.

In art manufactures proper, notably in porcelain, earthenware, and glass, as also in decorative furniture, our productions are of conspicuous excellence. It is possible that this may be due in a certain degree to the employment, in some branches, of skilled workers trained in foreign countries, and we cannot do otherwise than acknowledge the preëminence, in the main, of our French neighbors in design as applied to decorative work or disregard the efforts which they are making to maintain that preëminence, and those made in Belgium and Italy to emulate them.

ORIGIN OF MODERN INDUSTRIAL SYSTEM.

The beginnings of the modern industrial system are due, in the main, as we have indicated, to Great Britain. Before factories founded on the inventions of Watt, of Arkwright, and Crompton had time to take root abroad, and while our own commerce and manufactures increased from year to year, the great wars of the early part of this century absorbed the energies and dissipated the capital of continental Europe.

For many years after the peace we retained almost exclusive possession of the improved machinery employed in the cotton, woollen, and linen manufactures. By various acts of the last century, which were not repealed till 1825, it was made penal to enlist English artisans for employment abroad; the export of spinning machinery to foreign countries was prohibited until the early years of Your Majesty's reign. Thus, when less than half a century ago continental countries began to construct railways and to erect modern mills and mechanical workshops, they found themselves face to face with a full grown industrial organization in this country, which was almost a sealed book to those who could not obtain access to our factories.

FOREIGN TECHNICAL SCHOOLS.

To meet this state of things abroad, foreign countries established technical schools like the École Centrale of Paris and the polytechnic schools of Germany and Switzerland and sent engineers and men of science to England to prepare themselves for becoming teachers of technology in those schools.

Technical high schools now exist in nearly every continental state and are the recognized channel for the instruction of those who are intended to become the technical directors of industrial establishments. Many of the technical chemists have, however, been and are being trained in the German universities. Your commissioners believe that the success which has attended the foundation of extensive manufacturing establishments, engineering shops, and other works on the continent could not have been achieved to its full extent in the face of many retarding influences, had it not been for the system of high technical instruction in these schools, for the facilities for carrying on original scientific investigation, and for the general appreciation of the value of that instruction and of original research which is felt in those countries.

With the exception of the École Centrale of Paris, all these schools have been created and are maintained almost entirely at the expense of the several states, the fees of the students being so low as to constitute only a very small proportion of the total income. The buildings are palatial, the laboratories and museums are costly and extensive, and the staff of professors, who are well paid according to the continental standard, is so numerous as to admit of the utmost subdivision of the subjects taught. In Germany, as we have stated in a previous part of our report, the attendance at some of the polytechnic schools has lately fallen off, chiefly because the supply of technically trained persons is in excess of the present demand; certainly not because it is held that the training of the school can be dispensed with. The numerous young Germans and Swiss who are glad to find employment in our own manufactories have almost without exception been educated in one or other of the continental polytechnic schools.

Your commissioners cannot repeat too often that they have been impressed with the general intelligence and technical knowledge of the masters and managers of industrial establishments on the continent. They have found that these persons as a rule possess a sound knowledge of the sciences upon which their industry depends. They are familiar with every new scientific discovery of importance and appreciate its applicability to their special industry. They adopt not only the inventions and improvements made in their own country, but also those of the world at large, thanks to their knowledge of foreign languages and of the conditions of manufacture prevalent elsewhere.

The creation abroad of technical schools for boys intending to become foremen is of much more recent date than that of the polytechnic schools. To this statement the foundation during the First Empire of the three French Écoles des Arts et Métiers, at Châlons, Aix, and Angers, is only an apparent exception, because they simply vegetated until their reorganization within the last twenty-five or thirty years. Mining schools were, however, established in Prussia in the last century and in France about 1817. Among the examples of schools for foremen are those of Winterthur in Switzerland, Chemnitz in Saxony, and Komotau in the Austrian dominions, principally for engineers, and the École des Mines at St. Étienne, the latter more especially for mining and metallurgy. The theoretical instruction in these schools is similar in character but inferior in degree to that of the great polytechnic schools. On the other hand considerable attention is devoted in these schools to practical instruction in laboratories and workshops, which is not the case in the polytechnic schools. In Prussia, as will be seen from the ministerial report found in the appendix, a beginning has been made in the establishment of such secondary technical schools, but, in the words of the report, "its execution will be tedious and costly." In Bavaria the Industrie-Schulen, which are technical schools of a grade inferior to the polytechnic school, give both theoretical and practical instruction, the latter in some cases highly specialized, in preparation either for direct entrance on an industrial career or for further study in the polytechnic school. In France technical schools of a somewhat lower type are being established all over the country. The one at Rheims, previously described, is an excellent example of these schools. The boys from the Rheims school either enter the École des Arts et Métiers at Châlons or go into manufactories or into business, in each case with a fair knowledge of theory and manipulation, as mechanics or as chemists.

It is important to bear in mind that the French schools of the type of that at Rheims, though virtually advanced schools, now rank as superior elementary schools, to which the pupils are consequently entitled to claim admission without the payment of any fees.

Up to the present time, however, although a few foremen have received some theoretical instruction in schools of this kind, foreign foremen have not generally been technically instructed, but, as in England, are men who, by dint of steadiness, intelligence, and aptitude for command and organization, have raised themselves from the position of ordinary workmen.

The continental weaving schools may, on the whole, so far as their influence on trade is concerned, be ranked in the first and second categories; that is to say, they are attended by those who propose to become merchants, manufacturers, managers, or foremen. They are held in the highest estimation by some of the most intelligent and successful continental manufacturers; of this there can be no better proof than the erection, in substitution for the one already existing, of the splendid new weaving schools at Crefeld, probably the most flourishing centre of the general silk trade, at the joint expense of the state, the locality, and the commercial body. Weaving schools for workmen, like the evening and Sunday school of Chemnitz, which must not be confounded with the superior weaving school of that town, are poorly attended, and can have had no sensible influence on the progress of textile manufactures. But there are in many places lectures on weaving and pattern designing largely attended by workmen.

The French and German schools for miners, and the one which has been quite recently founded in Westphalia for workers in iron and steel, differ from the preceding schools for foremen, inasmuch as they are reserved for the theoretical instruction of men who, having already worked practically at their trades, have distinguished themselves by superior intelligence and good conduct. Most of the German schools of this kind are founded or maintained by the manufacturers, and will, we feel confident, repay the trades which have had the foresight and public spirit to create them, by training young men to become foremen and leading hands, willing and able to carry out with intelligence the instructions of their superior officers.

SOCIETIES AS TEACHING BODIES.

For the technical education of workmen, outside of the workshop, the resources of continental countries have hitherto been and are still very much more limited than has been supposed in this country to be the case. In several of the more important industrial centres of the continent there exist societies such as the Sociétés industrielles of Mulhouse, Rheims, Amiens, &c.; the Société d'enseignement professionnel du Rhône, which has its headquarters at Lyons and the Niederösterreichischer Gewerbe-Verein of Austria, one of the chief objects of which is the development of technical education among workmen and other persons engaged in industry, by means of lectures and by the establishment of schools and museums of technology. These associations are supported mainly by the merchants and manufacturers of the district to which their operations are restricted. In many cases they are founded and supported or are greatly assisted by chambers of commerce. These bodies abroad being incorporated, and having in France considerable taxing powers over their members, are generally wealthier and more influential than those in our own country. In addition to these sources of income the associations receive help from the municipality and sometimes from the state. In Mulhouse, besides promoting education, the society sees to the material wellbeing of the workmen by erecting on a large scale laborers' dwellings (la cité ouvrière) and by organizing savings banks and other economic arrangements, undertaking in this respect on a smaller scale what is done in this country by self sustaining associations like building and coöperative societies of the workpeople themselves. The society in Lyons has established numerous evening classes for elementary and technical instruction, which are attended chiefly by workpeople; and the South Austrian Trade Society, which has its central office in Vienna, has organized several technical day and evening schools for operatives of every grade, which are now under state control and receive subventions from the government. But although these societies, under different names and with varied objects, are very numerous, their sphere of action is limited, and the facilities they offer for evening instruction in science and technology are inferior to those which are at the disposal of our own workmen. No organization like that of the Science and Art Department or of the City and Guilds Institute exists in any continental country, and the absence of such organizations has been lamented by many competent persons with whom we came in contact abroad.

EDUCATION OF ARTISANS ABROAD.

In two very important respects, however, the education of a certain proportion of persons employed in industry abroad is superior to that of English workmen: first, as regards the systematic instruction in drawing given to adult artisans, more especially in France, Belgium, and Italy; and, secondly, as to the general diffusion of elementary education in Switzerland and Germany. In some parts of these latter countries great attention is paid to drawing in the elementary schools. In France, too (where elementary education has hitherto by no means been so general as in the two former countries), in the case of those workmen who have had the benefit of regular elementary school training, more attention has been paid to elementary drawing than is the case in this country. There are also in all large towns in France, and to a more limited extent in other countries, numerous evening "conférences" and "cours" on almost every subject of interest in art, science, and literature which workmen have the opportunity of attending, as they are entirely gratuitous. Among these the most remarkable are the lectures given by eminent men at the Conservatoire des Arts et Métiers of Paris. Most of these are of the nature of lectures rather than of practical instruction. There are, however, in many places excellent and numerously attended evening and Sunday technical classes, more especially in Belgium and Austria, and there can be no doubt that the instruction thus given is already exerting a considerable influence on the capacity and intelligence of the workmen, and that this influence will be increasingly felt in the future.

In the evening schools of North Germany (Fortbildungsschulen) the studies of the ordinary elementary school are continued, the further instruction being confined mainly to book-keeping and rudimentary mathematics, with some notions of natural philosophy. In the evening schools of the same class in South Germany the instruction given is of a more technical character than in the North.

For instruction in drawing, as applied mainly to decorative work in France, and to both constructive and decorative work in Belgium, the opportunities are excellent. The crowded schools of drawing, modelling, carving, and painting, maintained at the expense of the municipalities of Paris, Lyons, Brussels, and other cities—absolutely gratuitous and open to all comers, well lighted, furnished with the best models, and under the care of teachers full of enthusiasm—stimulate those manufactures and crafts in which the fine arts play a prominent part to a degree which is without parallel in this country. Instruction in art applied to industry and decoration is now pursued with energy in South Germany and in several of the northern Italian towns, and the influence of this instruction on the employment of the people is becoming very conspicuous in those countries. The government schools of applied art in France, under the decree of 1881, of which the Limoges Decorative Arts School is the earliest example, and which, like the abovementioned schools, are gratuitous, should be mentioned in this connection. * * *

HOME INDUSTRIES.

Home and village industries have been in some cases initiated, in others improved and extended, in districts where, from the poverty of the population and the scarcity of capital, special aids were essential, notably in Baden, Bavaria, and the Tyrol. In the schools established and maintained for this purpose, wood carving and inlaying, clock making, filagree work, basket making, and other simple trades for which there were local material and aptitude, have been taught with considerable success. In some cases these industries have been so firmly and permanently established as to render unnecessary the further maintenance of the special schools. In the primary schools of the Black Forest, straw plaiting is taught to the girls. Discriminating regard is paid to the capabilities of each sex. In "women's work" schools on the Reutlingen model and in the professional schools for girls which have been established in France and the Netherlands, instruction is successfully given qualifying girls for many useful occupations, though these are scarcely of the kind usually understood under the term of manufactures.

REPORT ON THE UNITED STATES.

The report of Mr. William Mather to your commissioners on his six months' tour throughout the United States of America and Canada for the purpose of studying the schools and factories of that continent deserves the most careful perusal. It will be seen that Mr. Mather assigns greater influence on American manufactures to the general education of the American people derived from their common schools than to their technical schools, the importance of which latter, however, in the training of civil engineers has been experienced for some years, though it has only more recently become recognized by those who are engaged in mechanical engineering and in metallurgical and manufacturing establishments of various kinds. This recognition is, however, now becoming universal. A decided preference is being given in the United States for the positions of managers and heads of departments to persons who have received a scientific training in a technical school, and the plan is followed in these schools of combining instruction in "application" with instruction in pure science. Although the conditions of American industry differ in many respects from our own, there can be no doubt that we may derive great advantage from a careful study of what is being done in the way of technical instruction in the United States, as, together with the elementary education of Canada, it is so graphically described by Mr. Mather. We may add that the accuracy of his statements and conclusions is generally confirmed by the accounts of technical instruction in America which we have received from other competent judges.

NEED OF TECHNICAL INSTRUCTION.

Not many years have passed since the time when it would still have been a matter for argument whether, in order to maintain the high position which this country has attained in the industrial arts, it is incumbent upon us to take care that our managers, our foremen, and our workmen should, in the degrees compatible with their circumstances, combine theoretical instruction with their acknowledged practical skill. No argument of this kind is needed at the present day. In nearly all the great industrial centres, in the metropolis, in Glasgow, in Manchester, Liverpool, Oldham, Leeds, Bradford, Huddersfield, Keighley, Sheffield, Nottingham, Birmingham, The Potteries, and elsewhere, more or less flourishing schools of science and art, of various grades, together with numerous art and science classes, exist, and their influence may be traced in the productions of the localities in which they are placed.

SPECIAL SCHOOLS ESTABLISHED BY MANUFACTURERS.

The schools established by Sir W. Armstrong at Elswick, by the London and Northwestern Railway Company at Crewe, and those of Messrs. Mather and Platt of Salford, in connection with their engineering works, testify to the importance attached by employers to the theoretical training of young mechanics. The efforts of Messrs. Denny, the eminent shipbuilders of Dumbarton, for encouraging the instruction of their apprentices and for rewarding their workmen for meritorious improvements in details applicable to their work, are proofs of this appreciation. The evidence of Mr. Richardson, of Oldham, and of Mr. Mather, of Salford, is emphatic as to their experience of its economical value.

Without more particularly referring to the valuable work in the past accomplished by the numerous mechanics' institutes spread over the country, many of them of long standing, we may point out that they are now largely remodelling their constitutions in order to bring up their teaching to the level of modern requirements as regards technical instruction. The example of the Manchester Mechanics' Institute may be studied in this connection.

Moreover, as evidencing the desire of the artisans themselves to obtain facilities for instruction both in science and art, we must not omit to mention the classes established and maintained by some of the leading coöperative societies. The Equitable Pioneers' Society of Rochdale has led the way in this, as in so many other social movements. It is much to be wished that the various trades' unions would also consider whether it is not incumbent on them to promote the technical education of their members.

The manufacturers of Nottingham speak with no uncertain voice of the important influence of the local school of art on the lace manufacture of that town. Without the Lambeth school, the art productions of Messrs. Doulton could scarcely have come into existence. The linen manufacturers of Belfast are becoming alive to the necessity of technical instruction if competition on equal terms with foreign nations in the more artistic productions is to be rendered possible. The new generation of engineers and manufacturers of Glasgow has been trained in the technical schools of that city. The City and Guilds of London Institute owes its existence to the conviction of the liverymen that technical instruction is a necessary condition of the welfare of our great industries.

TEACHING OF NATURAL SCIENCE.

Natural science is finding its way surely though slowly into the curriculum of our older English universities and of our secondary schools. It is becoming a prominent feature in the upper divisions of the elementary board schools in our large towns. There are scarcely any important metallurgical works in the kingdom without a chemical laboratory in which the raw materials and products are daily subjected to careful analysis by trained chemists. The attainments of the young men who have been trained in the Royal Naval College at Greenwich recommend them for remunerative employment by our great shipbuilding firms.

BEST MODES OF ADVANCING TECHNICAL INSTRUCTION.

In our relations with public bodies and individuals in this country during the progress of our inquiry, the greatest anxiety has been manifested to obtain our advice as to the mode in which technical instruction can be best advanced, and we have to acknowledge the readiness of the Education and Science and Art Departments to receive and act upon suggestions in matters of detail from individual members of the commission which it would have been pedantic to delay until the completion of our task. Among the suggestions which have thus been made was that of an exhibition of the school work of all nations, which His Royal Highness the Prince of Wales has consented to add to the health exhibition of 1884. This exhibition will be an appropriate illustration of the account of foreign schools contained in the previous parts of this report. Your commissioners, during their continental visits, received from the authorities of technical schools numerous assurances of their cordial support and coöperation in such a display.

Thus, there is no necessity to "preach to the converted," and we may confine ourselves to such considerations as bear upon the improvement and more general diffusion of technical education at home in accordance with the conditions and needs of our industrial population.

In dealing with the question of technical instruction in this country we would, at the outset, state our opinion that it is not desirable that we should introduce the practice of foreign countries into England without considerable modifica ion. As to the higher education, namely, that for those intended to become proprietors or managers of industrial works, we should not wish that every one of them should continue his theoretical studies till the age of twenty-two or twenty-three years in a polytechnic school, and so lose the advantage of practical instruction in our workshops (which are really the best technical schools in the world) during the years from eighteen or nineteen to twenty-one or twenty-two, when he is best able to profit by it.

We have, also, in the science classes under the Science and Art Department (to the intelligent and able administration of which it is our duty to bear testimony) a system of instruction for the great body of our foremen and workmen, susceptible certainly of improvement, but which in its main outlines it is not desirable to disturb.

Moreover, in considering by whom the cost of the further development of technical instruction should be borne, we must not forget that, if it be true that in foreign countries almost the entire cost of the highest general and technical instruction is borne by the state, on the other hand, the higher elementary and secondary instruction in science falls on the localities to a much greater extent than with us; while, as to the ordinary elementary schools, the cost in Germany and Switzerland is almost exclusively borne by the localities; and this was also the case in France and Belgium until the people of those countries became impatient of the lamentable absence of primary instruction on the part of vast numbers of the rural and in some instances of the town population, an evil which large state subventions alone could cure within any reasonable period of time. With the exception of France, there is no European country of the first rank that has an imperial budget for education comparable in amount with our own. In the United Kingdom at least one-half of the cost of elementary education is defrayed out of imperial funds, and the instruction of artisans in science and art is almost entirely borne by the state. Hence it will be necessary to look, in the main, to local resources for any large addition to the funds required for the further development of technical instruction in this country.

In determining what is the best preparation for the industrial career of those who may expect to occupy the highest positions, it is necessary to differentiate between capitalists, who will take the general as distinguished from the technical direction of large establishments, and those at the head of small undertakings, or the persons more especially charged with the technical details of either. For the education of the former, ample time is available and they have the choice between several of our modernized grammar schools, to be followed by attendance at the various colleges in which science teaching is made an essential feature, or the great public schools and universities, provided that, in these latter, science and modern languages should take a more prominent place. Either of these methods may furnish an appropriate education for those persons to whom such general cultivation as will prepare them to deal with questions of administration is of greater value than an intimate acquaintance with technical details. It is different in regard to the smaller manufacturers and to the practical managers of works. In their case, sound knowledge of scientific principles has to be combined with the practical training of the factory, and therefore the time which can be appropriated to the former, that is, to theoretical instruction, will generally be more limited.

How this combination is to be carried out will vary with the trade and with the circumstances of the individual. In those cases in which theoretical knowledge and scientific training are of preëminent importance, as in the case of the manufacturer of fine chemicals, or in that of the metallurgical chemist, or the electrical engineer, the higher technical education may with advantage be extended to the age of twenty-one or twenty-two. In the cases, however, of those who are to be, for example, managers of chemical works in which complex machinery is used, or managers of rolling mills, or mechanical engineers, where early and prolonged workshop experience is all-important, the theoretical training should be completed at not later than nineteen years of age, when the works must be entered and the scientific education carried further by private study or by such other means as do not interfere with the practical work of their callings. Many colleges of the class to which we have referred have already arranged their courses to meet these requirements, and some of them, as will appear from our reports of visits, have workshops for the purpose of familiarizing the students with the use of machine and hand tools.

It is to be regretted that nearly all of these very useful institutions suffer more or less from the want of adequate funds to enable them to provide for such a staff of professors as is necessary for the proper subdivision of the various subjects taught, and for the equipment of museums, apparatus, and laboratories of the various kinds essential to the practical instruction of the student. In this respect the provision in this country compares most unfavorably with that in the universities and polytechnic schools of the continent, even in spite of recent munificent benefactions like those of the late Mr. Charles Beyer of Manchester, the late Sir Josiah Mason of Birmingham, of the Baxter family at Dundee, the late Mr. Harris of Preston, the liberal gifts of Mr. Crawford to the Queen's College at Cork, and others. In speaking of benefactions, we do not overlook the noble endowment of Sir Joseph Whitworth for the encouragement of engineering by affording to able and promising young men, especially of the class of artisans, the means of obtaining theoretical combined with practical training, the former in institutions of the kind we have referred to.

SECONDARY SCHOOLS AS A PREPARATION FOR TECHNICAL SCHOOLS.

The best preparation for technical study is a good modern secondary school of the types of the Manchester Grammar School, the Bedford Modern School, and the Allan Glen's Institution at Glasgow. Unfortunately, our middle classes are at a great disadvantage, compared with those of the continent, for want of a sufficient number of such schools. The transfer of the functions of the endowed schools commissioners to the charity commissioners has not had the effect of increasing the rate of progress in the reorganization of our secondary schools. We consider it to be essential that steps should be taken to insure that this work shall be carried on with greater vigor in the future than it has been hitherto. We learn that there are still endowments available for education, amounting to upwards of 200,000*l.* per annum, which have not been dealt with by the commissioners. In the schemes for the new schools the subjects of science and modern languages should form a very prominent part; and it would be desirable in some of these schools, especially in large towns (where classical schools are not wanting), in order to provide for the fuller teaching of these subjects, more particularly of mathematics, that the classical languages should be altogether excluded from the schemes of instruction. But the existing endowments are very unevenly distributed over the country; in many of the large manufacturing centres no resources of the kind exist; private enterprise is clearly inadequate to do all that is required in establishing such schools, and we must look to some public measure to supply this, the greatest defect of our educational system. It is to be desired that, in the proposed reorganization of local government, power should be given to important local bodies, like the proposed county boards and the municipal corporations, to originate and support secondary and technical schools in conformity with the public opinion for the time being of their constituents.

Intelligent youths of the artisan classes should have easy access to secondary and technical schools by numerous scholarships, and the more promising students of them again to the higher technical colleges.

SCIENCE TEACHING IN THE ELEMENTARY SCHOOL.

For the great mass of our working population, who must necessarily begin to earn their livelihood at an early age and from whom our foremen will be mostly selected, it is essential that instruction in the rudiments of the sciences bearing upon industry should form a part of the curriculum of the elementary schools, and that instruction in drawing, and more especially in drawing with rule and compass, of a character likely to be useful to them in their future occupations as workmen and artisans, should receive far greater attention than it does at present. The importance of the first of these subjects has so far been acknowledged by the education department that in all infant schools simple lessons on objects and the more commonly occurring phenomena of nature have been made obligatory. This system of instruction, if properly illustrated by the exhibition of the object itself, or of diagrams or models of the same, or by the simplest kinds of experiments, is an excellent foundation for the subsequent teaching of elementary science.

When, however, the child enters the elementary school the teaching of science practically ceases until it reaches the upper division, inasmuch as the arrangement of the class subjects in the lower division is found in practice to exclude science from that division; only two subjects being allowed, of which "English" must be one and "geography" may be another, this latter being generally preferred to the alternative subject of "elementary science." It appears to us that geography, if properly taught, is a branch of elementary science which need not be separated from science generally, and can well be taught along with the other branches of science by means of the object lessons which are described in the code. Thus there would be only two class subjects instead of three, and in this way the connecting link which is now wanting between science as taught in the infant school and in the higher division of the elementary school would be supplied

HIGHER ELEMENTARY SCHOOLS.

We could hardly overstate our appreciation of the value of the plan of giving instruction in natural science by special teachers, as carried out in the board schools of Liverpool and Birmingham, where the employment of a well qualified science demonstrator insures the sound character of the instruction, while the repetition of the lesson by the schoolmaster enables him to improve himself in the methods of science teaching. This should, however, be supplemented by the establishment of higher elementary schools, like those of Sheffield and Manchester, into which the more advanced pupils of the primary schools may be drafted, especially if the parents of those children should be able to keep them at school up to the age of fourteen or fifteen unassisted, or, if they are unable to do so, assisted by scholarships taking the place of the wages which they would otherwise earn. In these latter schools it is possible to provide efficient laboratories in which practical work is performed by the pupils, while this cannot adequately be done for the ordinary primary schools. Youths having the advantage of such instruction will be well prepared to avail themselves at a later period of the classes of the Science and Art Department and of the technical classes under the auspices of the City and Guilds Institute, which are now so numerous, and many of which are under excellent teachers.

The evidence given before us leaves no doubt that the directors of both these institutions use every effort in their power to secure sound and practical teaching in these classes, so far as that can be effected by assistance in training the teachers and by careful testing, in their examinations, of the results of the instruction given. In regard to the first, much is to be hoped for from the increasing number of teachers who are now able to take advantage of the high scientific instruction given in the Normal School of Science at South Kensington, as well as from the pecuniary assistance offered by the Science and Art Department to science teachers desirous of attending the courses and laboratories of various provincial colleges, while for teachers of technology a great step in advance will be made when the Central Institution of the City Guilds is in operation. As to the latter—that is to say, the thoroughness of the instruction given in the classes—more close and frequent inspection than at present is much to be desired, a higher payment for the more advanced grades of several subjects should be made than is now the case, and practical laboratory work in the higher grades in science should be more generally demanded.

An important point to which the attention of the inspectors should be more particularly directed is to ascertain that proper apparatus and appliances are provided for practical work in these classes.

ART SCHOOLS FOR ARTISANS.

With reference to the subject of drawing, we cannot too often call attention to the extraordinary efforts which are being made abroad for instruction in art, more especially as applied to industrial and decorative purposes, and to the important influence of this instruction in furnishing employment for artisans on the continent. Without depreciating what has been done in this direction by the schools and classes under the auspices of the Science and Art Department in this country, and while fully alive to the importance of the organization which tends to the diffusion of art instruction over a wide area, your commissioners cannot conceal from themselves the fact that their influence on industrial art in this country is far from being so great as that of similar schools abroad. This is due, no doubt, to some extent to the want of proper and sufficient preparation on the part of the students, owing to the inadequate instruction they have received in drawing in the elementary schools.

DRAWING AND MODELLING.

Your commissioners are aware that the number of children who are supposed to learn drawing in elementary schools is considerable, but it is small compared with the total number in attendance, and it is, we have reason to believe, diminishing. We have ascertained by inspection that the instruction is in far too many cases of little value. Instead of a mass of inferior drawings being sent up once a year to South Kensington for examination there, it is necessary that the instruction in drawing in elementary schools should be as carefully supervised on the spot by the Whitehall inspectors as is that in other branches of primary education. In nearly all the places abroad which your commissioners have visited they have found that drawing is an obligatory subject of instruction in the primary school and that it is regarded as of equal importance with writing. The number of hours which the children devote to lessons in drawing abroad is frequently as many as three per week, whereas in England the subject is not only not obligatory, but in about three-fourths of our elementary schools no instruction whatever is given in this subject, and in those schools in which drawing is taught the time devoted to it rarely exceeds one hour per week, and even that not always regularly. This want of attention, together with the absence of competent teachers, proper models and methods, and adequate inspection, fully accounts for the inferiority to which we have referred. The training of teachers for the Irish national schools includes special instruction in drawing, and a grant for drawing is made to primary schools in Ireland by the commissioners of national education. The drawing in some of the schools of the Christian Brothers and in some of those under the board of intermediate education is good.

Your commissioners are of opinion that sound instruction in the rudiments of drawing should be incorporated with writing in all primary schools, both for girls and boys, by which, also, according to the experience of competent authorities, the writing would be much improved. Something in this direction has already been done in many good infant schools, where children of the age of six draw triangles, squares, oblongs, &c., on their slates. This exercise is repeated on the day of inspection, and is taken into account in estimating the value attached to "appropriate occupations."

We have observed with satisfaction the recent circular (Art Form, No. 1194) of August, 1883, prescribing the new exercise of drawing to scale. We believe the principle therein laid down to be excellent, and we trust that the school managers and teachers will avail themselves of the advantages offered to them in this alteration in the first grade work. The permission recently accorded to teachers to give instruction in drawing and modelling to the children of the elementary schools out of the ordinary school hours is also likely to prove very advantageous.

We are of opinion that more attention than has hitherto been devoted to it should be directed to the subject of modelling in the elementary school. We notice that by a recent addition to the art directory small classes in modelling may now claim a local examination; we believe this to be a most salutary regulation. Modelling is an exercise of great importance to the future workman, and its rudiments can well be taken up, as in continental schools, at the earliest age.

Assuming such preparation in the infant and elementary school as we have here suggested, the progress of subsequent instruction in art classes would be immeasurably more rapid. Whether the attendance in any given locality will ever be so great in this country, where the instruction has to be paid for, as in France, Belgium, and elsewhere, where it is gratuitous, is a matter for grave doubt. However this may be, there are two points in connection with the instruction in art schools and classes as bearing on industrial pursuits which require careful attention. The first is one which we are glad to perceive is now fully appreciated by the Science and Art Department, viz, the advantage of substituting practice in rapid but correct execution in place of the method of stippling, which was formerly not sufficiently discouraged in art schools and classes; greater attention also than hitherto should be given to modelling. The second point relates to industrial designing. This, for a variety of reasons, the chief of which are the want of sufficient knowledge of manufactures on the part of art teachers and the absence of sympathy evinced by the proprietors of industrial works, has, with some notable exceptions, not received sufficient attention in our art schools and classes. In fact, there has been a great departure in this respect from the intention with which the "schools of design" were originally founded, viz, "the practical application of (a knowledge of) ornamental art to the improvement of manufactures." Large grants of public money for teaching art to artisans in such classes can scarcely be justified on any other ground than its industrial utility.

APPLIED ART WORK.

On the subject of the teaching of industrial design, we are of opinion that the Science and Art Department may with advantage depart from their principle, as at first laid down, of granting encouragement to design only, so far as to award grants for specimens of applied art workmanship in the materials themselves, as a test of the applicability of the design and as a reward for success in overcoming the technical difficulties of the manufacture.

It seems scarcely fair that well executed art work by a student, say a richly chased piece of silver plate, should obtain only the same recompense as the design for the same object on paper. We are aware that special vigilance would in this case be required in order to prevent the use of such rewards for trade or for other than educational purposes.

It appears from the evidence, with which we include a remarkable letter from M. Willms, the eminent designer of Birmingham, that it would be well if persons practically acquainted with the application of design to industrial manufactures were more extensively consulted in the award of prizes for industrial design. We are aware that this is now done in some measure, but, however eminent may be the gentlemen whom the department has been in the habit of consulting, it is unlikely that the small number of these should be sufficiently familiar with the vast varieties of applications to have the special knowledge requisite for judges in the large number of trades in which design forms an important element.

INDUSTRIAL ART MUSEUMS.

Among the most important means of stimulating industrial art education and of spreading a knowledge and appreciation of art throughout the country is the foundation of local museums of applied art of such a character as is best adapted to advance the industries of the districts in which they are situated.

Stimulated by the advice and influence of the director of the South Kensington Museum, and with the liberal aid of private benefactors, such collections have been provided in the local art museums at Sheffield, Derby, York, and elsewhere. In Manchester also, steps have been taken to found an industrial museum, and the corporation has acquired the famous Bock collection of textile fabrics for this purpose. The Manchester, Birmingham, Stoke, and other galleries are open on Sundays, and are visited by increasing numbers of orderly working people. It is very desirable that similar facilities should be provided for the inspection of our metropolitan museums and collections. We are of opinion that the connection between these museums and the local schools of art should be of an intimate character. Indeed, in this respect much may be learned from foreign countries, where many such museums exist and exert great influence on manufactures. Further, we must express strong approval, in which we merely repeat the opinion offered by competent witnesses both at home and abroad, of the system of circulating among the local museums collections of works of art from the national collection at South Kensington. The value and utility of these collections are greatly enhanced by suitable manuals and guide books well illustrated and sold at a cheap rate; these serve to explain to visitors of the artisan classes the features most worthy of notice.

While we fully admit the force of the contention that the contributions of the state to the foundation and maintenance of museums will be of the greatest service to the country at large, if applied mainly to central institutions like those of the metropolis, of Edinburgh, and of Dublin, we highly approve of the grants to provincial museums of reproductions, either gratuitously or at a very low price. Those grants may even, in the case of typical museums situated in some of the chief industrial centres, be extended with advantage to original examples of art and of manufactures calculated to increase the knowledge and improve the taste of those (more especially of the artisans) engaged therein.

GOVERNMENT BUILDING GRANTS.

Your commissioners believe that the grants now made in aid of the buildings for local schools of science and art and for industrial museums in connection with them, limited as they are to a maximum of 500*l*. for art schools and the same sum for science schools, coupled also with the requirements that they shall be given only for buildings under the free libraries act or in connection with schools of art require revision, and tend rather to discourage local effort than otherwise, inasmuch as they give an erroneous impression of what is really required in order that suitable buildings may be provided.

Your commissioners highly approve of the recent foundation of scholarships to promising students in the science classes of the Science and Art Department, enabling them to continue their education at various higher schools. The limitation of the available funds appears to have rendered necessary in consequence of this step the abolition of the Queen's prizes, given for success in the elementary stages, and the substitution of honorary certificates in place of them. We find there is an opinion prevalent that these certificates will not afford sufficient stimulus to certain students. It is to be hoped, however, that a small addition to the customary local prize funds will be readily subscribed to supply this deficiency.

But all these institutions and measures will not alone accomplish the object aimed at. For this the localities must rely far more than has been the case hitherto on their own exertions. Teachers should know that they labor under the eye of those who are interested in the work being thoroughly and conscientiously done. The organization and efficiency of the science schools at Oldham and Keighley are conspicuous examples of what may be done in regard to the scientific and technical instruction of artisans, where local employers take an active and intelligent interest in the work. The Oldham School of Science and Art may, so far as science teaching is concerned, be regarded as the type and example of what evening schools should be; and the existence of similar efficient and flourishing schools in all our industrial towns would greatly contribute to confirm our industrial position. The remuneration of teachers should not depend to so great an extent as at present on the grants from headquarters. School boards should be authorized to establish and conduct science and art classes for artisans, and where no school boards exist power should be given to the local governing bodies to establish or support such schools. If the teaching is not entirely gratuitous (and the regularity of attendance in the art classes in the French and Belgian cities and in the science classes in Liége, Seraing, and elsewhere shows that it is a prejudice to suppose that people only appreciate what they pay for), the fees ought to be on the lowest possible scale.

TEACHING AND APPLIANCES.

Your commissioners have had before them deputations of representative workingmen who have expressed their views on the wants of the working classes with respect to the teaching of science and art, and who have stated that the assistance afforded by the department is not sufficiently directed towards the requirements of their several trades. We believe that many workmen are disposed to attach too little value to the importance of acquiring a knowledge of the principles of science because they do not see their application. We are of the opinion that whenever it is possible persons engaged in the trade taught and having scientific knowledge should give instruction to workmen, and we have ascertained that a large number of such teachers are registered under the examination scheme of the City and Guilds of London Institute. We visited classes of this character at the Polytechnic Institution in Regent street, at the Manchester Technical School, the Lyceum at Oldham, and at other places, some of which were excellent.

The city guilds are trying a most important experiment in their practical classes. If empiricism be avoided, a great point will be gained by the attraction to working men and women of a mode of instruction in which the direct application of scientific principles is the means by which a knowledge of those principles is conveyed to their minds. As to this point, we refer to the almost unanimous expression of opinion contained in the letters of eminent manufacturers in reply to our circular asking their advice as to the best means of promoting technical instruction.

We cannot dismiss this branch of the subject without calling attention to the educational value of the museums of natural objects now found in many of the modern elementary schools of the continent. Probably the best examples of such collections are those of the Normal School of Brussels and of the elementary schools of Zürich. Collections of natural objects, pictures, and diagrams are of the greatest assistance for illustrating object lessons in rudimentary science to children of the earliest years.

Many persons who have paid attention to the working of free libraries in our large towns are of opinion that the benefit of these might be extended to elementary schools by placing at the disposal of such schools books of a character calculated to interest children of school age. Among these books some suitable technical works, especially illustrated ones, might be included. These school libraries would be of the nature of the branch libraries which are now attached to many of the free libraries of our large towns.

Your commissioners, after having had the opportunity of further considering the value of manual work as a part of primary instruction and after having seen such work introduced into elementary schools of various grades in other countries besides France, are able now to express a stronger opinion in its favor than at the time of their first report. They do this with greater confidence because, in consequence partly of the suggestion contained in that report, the experiment of introducing manual work into primary schools has been successfully effected by at least two school boards in this country, viz, those of Manchester and Sheffield.

MANUAL WORK.

Your commissioners have had the opportunity of inspecting the manual work of the pupils, both at the Manchester board schools and at the central school in Sheffield, and they are satisfied that such work is very beneficial as a part of the preliminary education of boys in this country who are to be subsequently engaged in industrial pursuits, even though it should not, as however it probably will do, actually shorten the period of their apprenticeship.

Your commissioners see no reason why, since grants are made on needlework in girls' schools, they should not be made on manual work in boys' schools. This instruction may be given so as not to interfere with the ordinary work of the school. It has been proved that this can be done, the boys being most eager to return for handicraft teaching after school hours.

Whenever more attention shall be given to drawing, and especially to mechanical and geometrical drawing, in the ordinary and the higher elementary schools, it will be proper and desirable that the work executed in the shops attached to these schools should be made from drawings prepared by the children themselves.

ATTENDANCE AT ELEMENTARY SCHOOLS.

We need scarcely say that the success, not only of technical, but of the ordinary elementary instruction of our working population depends upon the regular attendance of the children at school and upon their remaining there sufficiently long to insure that the knowledge acquired shall leave some lasting impression on their minds. As will have appeared from other parts of this report, the children of the workpeople of Germany and Switzerland, with few exceptions, remain at school till the age of fourteen years, and in some of the German States are required to continue their elementary instruction two years longer in evening and Sunday schools, if their examination at fourteen has not been satisfactory. The wages of the parents in these countries are generally lower and the sacrifice of their children's earnings is consequently felt more than with us. The efficiency of the American workmen is mainly attributed, by all who have inquired into the subject, to the primary education acquired by them during a prolonged attendance at school. In our own country great diversity prevails as to the standard authorizing the employment of children as full-timers. In Scotland this will be remedied by the act of last session. After next year no child under the age of fourteen years can be employed on full time in Scotland, unless it has passed the fifth standard. We have no doubt that all classes interested in industry will quickly reap the benefit of this amendment of the law, and we see no reason why this regulation should not be extended to England and Wales, so far as it applies to factories and workshops.

COLLEGES AND THEIR TEACHING.

We have avoided in the foregoing statement making special observations on the merits or defects of the various scientific and technical colleges and schools which are at work or in course of establishment in this country, but we think it due to those who have founded and those who are conducting these excellent institutions to state that all of them, in each of the three divisions of the United Kingdom, are, in spite of limited means, producing good results. It is most praiseworthy on the part of the professors and teachers that they devote themselves to the important work of tuition for salaries so small as those which they as a rule receive, when many would, by employing their scientific and technical knowledge in private enterprise, obtain much larger pecuniary remuneration. We may remark concerning the colleges that it is not necessary that all of them should be of the highest type. To enable the relatively small number of persons capable of occupying the highest industrial positions to acquire the most complete education of which modern science admits, only a few well equipped institutions of high rank are needed. It is, however, of national importance that these few should be placed in such a position of efficiency as to enable them to carry out successfully the highest educational work in the special direction for which circumstances, particularly of locality, have fitted them. Your commissioners believe that no portion of the national expenditure on education is of greater importance than that employed in the scientific culture of the leaders of industry. Your commissioners fear that the belief in the efficacy of training of this *highest* character is, in England, at present small among those whom it will ultimately benefit; and yet there are few countries in which so many investigations have been made the practical bearings of which were not at the outset apparent but which have in the end led to the most important practical results. The discovery by Faraday of magneto-electricity and by Joule of the mechanical equivalent of heat at once occur as examples. The Englishman is accustomed to seek for an immediate return, and has yet to learn that an extended and systematic education up to and including the methods of original research is now a necessary preliminary to the fullest development of industry. It is, among other elements of progress, to the gradual but sure growth of public opinion in this direction that your commissioners look for the means of securing to this country in the future, as in the past, the highest position as an industrial nation.

We desire to express our satisfaction at the recent establishment of weaving and dyeing schools in the north of England, and of mechanical laboratories in several localities. The utility of weaving schools to proprietors and managers of factories, and to merchants who desire to become acquainted with the processes of the manufacture of the goods in which they deal, has been so clearly demonstrated on the continent that we need adduce no further arguments in their favor. The weaving and dyeing schools of Leeds have been established and are maintained entirely by the Clothworkers' Company of London. We regard this as one of the most useful and appropriate purposes to which a portion of their funds could have been devoted. The mechanical laboratoriesand mechanical drawing schools at Nottingham, Sheffield, Huddersfield, and elsewhere will be of the greatest service in enlarging the knowledge and experience of young artisans who are kept continuously at one branch in their daily work.

The teaching of art and science subjects in the training colleges of Great Britain for elementary school teachers is very defective. The inspection on the part of the Science and Art Department has until lately been greatly neglected, owing to the divided responsibility for the colleges of the Education Department and the Kensington authorities. The answers received by the examiners to such questions as the following: "Write out the heads of a lecture to an elementary class on the chemical and physical properties of water, mentioning the experiments which you would show and your object in showing them," prove conclusively that the students have no idea as to how such a simple matter ought to be brought before a class. It would greatly conduce to sound and efficient training in science, and particularly in the methods of teaching, if those students in training who have shown an aptitude for science work could be sent annually to the Normal School of Science at South Kensington or to other approved efficient institutions. The provision for art teaching in most of the training colleges is inferior even to that at present made for science, and an entire reform in this respect is urgently needed; and similar measures should be taken for systematic instruction in art as in science. Considerable attention is, as we have said elsewhere, paid to drawing in the Normal School in Dublin, where it is taught by a competent art master.

The school boards of our great cities are fully alive to the defective character of the instruction of pupil teachers. In London, Liverpool, and elsewhere they have endeavored to apply a partial remedy by introducing joint instruction, under special teachers qualified in each subject, instead of having each headmaster to instruct the pupil teachers of his own school in every subject. The Education Department has also taken a small step in the right direction by somewhat limiting the number of hours that the pupils may be employed in teaching, so as to give them a little more leisure for learning. No considerable improvement can, however, be expected until the great school boards are authorized to establish colleges for training teachers. These colleges would be day schools and need not receive from the State enormous capitation grants like those now given to the English denominational training colleges, but only small allowances like those granted to the day students in those of Scotland.

CITY AND GUILDS OF LONDON INSTITUTE.

In concluding this part of our subject, we deem ourselves justified in giving, at the risk of repeating some of the statements we may have made in the earlier parts of our report, a short review of the work initiated, controlled, and contemplated by the City and Guilds of London Institute, inasmuch as this important organization has been created in order to promote the technical instruction of persons of every grade engaged in industry.

The institute had not been in existence very long when your commissioners were appointed, and consequently they have scarcely had the opportunity of estimating the value of the work it is doing in some of its branches. Even now that work is in many parts of the kingdom unknown, and this is particularly the case in Ireland. In Dublin, Cork, and in many other Irish towns nothing was known at the time of our visit of the encouragement to technical instruction offered by the institute's scheme of technological examinations, whereas in Belfast advantage has been taken of it, and the establishment there of a technical school for instruction in the weaving and dyeing of linen and in mechanical engineering is largely due to its action.

Central Institution.—The Central Institution, which is not yet opened, is intended by the institute to fulfil functions resembling those of the great polytechnic schools of the continent. Your commissioners have examined the proposed scheme of instruction embodied in the report of the institute, and they have also inspected the building, which is nearly complete. They consider that, as the number of technical classes and technical schools increases, as it is likely to do, the want of such an institution as that in Exhibition road for the training of teachers will be more and more felt. It will be of great advantage as a technical high school for the metropolis, which is in fact one of our greatest industrial centres. It is intended to afford additional facilities for the prosecution of original research in science. In order, however, that the institution may effect the purpose for which it is intended, it should be well endowed, both for the provision of adequate special instruction and also for the establishment of exhibitions to defray the cost of maintenance of poor students while pursuing their studies. Without expressing any positive opinion as to the amount required for this purpose, your commissioners fear that the annual sum at present subscribed by the livery companies is inadequate to the future requirements of the institution.

Finsbury Technical College.—As regards the Finsbury Technical College, your commissioners believe that the evening classes connected with it are giving valuable technical instruction, such as is greatly needed by the artisans of the district in which the school is situated. The practical laboratory instruction in the applications of electricity to trade purposes is worthy of special mention.

The program of the day school is well devised, and the offer of scholarships to the principal middle class schools of the metropolis, which enable select pupils therefrom to continue their education at the Finsbury College, is a good feature in the scheme. Considering the want that is generally felt of good trade schools into which promising pupils from the upper standards of the public elementary schools may be drafted, your commissioners are of opinion that a more intimate connection of the day department of the Finsbury Technical College with the elementary schools would also be desirable.

We think that similar trade schools, in which the curriculum consists mainly of practical science teaching, workshop instruction, drawing, and modern languages, might with advantage be established in other parts of London.

South London Technical Art School.—Your commissioners examined with great interest the work of the South London Technical Art School. The teaching of this school has had a direct bearing upon the important manufacturing works of Messrs. Doulton, and in few cases have we been able more definitely to ascertain the extent to which technical instruction has benefited a local industry. In many other branches besides that of the manufacture and painting of pottery, the teaching of design in connection with the material to which it is to be applied would be undoubtedly advantageous. In this school practical instruction is also given in wood engraving, and a class is about to be formed in enamelling; the City and Guilds of London Institute might usefully extend this kind of teaching in other directions.

Technological classes in the country.—By means of the institute's scheme of technological examinations, classes have been formed in all the large manufacturing towns, in which the instruction is more specialized, according to the requirements of persons engaged in different industries, than has been thought desirable in the state-aided classes which are held under the direction of the Science and Art Department. It will be seen by the collection of letters from eminent manufacturers, that classes of the former kind are greatly valued and regarded as deserving of continued encouragement.

The regulation of the institute which restricts the payment on results to the case of candidates engaged in the industries to which the examination refers, is a good one; and the introduction of practical tests and the importance which the institute attaches to preliminary science knowledge and to skill in drawing are to be commended. From the rapid increase in the number of candidates for these examinations during the last four years (the number in 1879 having been 202, and in 1883, 2,397), it may be assumed that, as they become more generally known, that number will still further increase, and that much larger funds will be required in payment to teachers on results.

We consider that the institute has rendered efficient service to technical education by means of the contributions it has given to the establishment of technical schools in the great centres of manufacturing industry, where they are even more necessary than in the metropolis. The institute appears to have distributed its grants with judgment and discretion, and in many cases, notably in Nottingham, Manchester, Sheffield, and Leicester, its contributions have had the effect of stimulating local effort in the establishment of new technical classes.

Your commissioners are able generally to indorse the several schemes of technical instruction now in operation or about to be carried on by the City and Guilds of London Institute, and in view of the efficient and permanent working of these schemes we should be glad to see the funds of the institute made fully adequate to the efficient carrying out of the objects it has in view, which, in our opinion, is not yet the case. We think it is of importance that the grants made by the contributing livery companies should be placed upon a permanent basis.

TECHNICAL INSTRUCTION IN IRELAND.

While the preceding remarks apply to the United Kingdom as a whole, including those portions of Ireland, and more especially of the province of Ulster, in which the factory system is fully developed, other portions of the latter country require to be separately considered. In saying this we refer more particularly to the poor and remote districts of the west.

Dublin.—Before proceeding to this part of the subject, however, we would refer very shortly to the question of technical instruction suitable for foremen and workmen in Dublin. While science and art classes, many of them very successful, are to be found in several of the important towns of Ireland, there are scarcely any science classes at work in Dublin. Various reasons were assigned to us for this state of things, some of them of a kind into which it is not expedient that we should enter. At the same time, there is in Dublin the Royal College of Science, with a staff of competent professors, an admirable technical museum, and laboratories fairly well equipped for practical work. It appears from the evidence that, of the small number of students who follow a complete course of instruction in this institution, about one-half are Englishmen, holders of the royal exhibitions of the Science and Art Department, scarcely any of whom become teachers of science in Ireland. There are no short summer courses at the college, like those at the normal school at South Kensington, for the instruction of science teachers. There are, we are aware, some courses of evening lectures, but, although the laboratories of the college are the only ones in Dublin available for practical evening instruction, such instruction in science and in mechanical drawing forms no part of the arrangements of the college. It appears that by the rules of the Science and Art Department the professors of the college cannot earn grants on the results of instruction in science, as would be the case if they were ordinary science teachers. We are of opinion that so long as the effective work of the college in preparing associate students, and more particularly Irish students, is so limited in area as at present, evening classes with practical laboratory work should form a part of the regular college courses, and that the remuneration of the professors should depend in part on the success, or at any rate on the regular attendance, of students at such classes.

Irish intermediate schools.—We would also remark that we have received evidence of a very contradictory nature as to the teaching of science in the Irish intermediate schools. We believe, however, that it is engaging the attention of the board of intermediate education, and we only deem it necessary to state in reference to this subject that efficient instruction in science will not be possible in those schools unless they are provided with proper laboratories, which in most if not in all of them are at present entirely wanting.

But the most important part of our task with regard to Ireland is to consider the possibility of improving the industrial conditions of the poor and remote districts of the west by means of technical education.

Books used in Irish national schools.— By the courtesy of Sir Patrick Keenan, K. C. M. G., the resident commissioner of national education in Ireland, your commissioners have been furnished with what they understood to be a complete set of the books used in the Irish national schools. They find that these books are well adapted for the literary instruction of the children of various ages in those schools, and that they contain much interesting information on the natural features and resources of Ireland. But, except as to agriculture, they do not afford adequate assistance towards graduated instruction in industrial processes or in the rudiments of the sciences on which those processes are founded. As the Irish national education commissioners are by their regulations mainly responsible for the selection of the books used in the schools, this defect should receive their early attention.

Home industries and manual dexterity of Irish people.—There is a general consensus of opinion on the part of persons of all ranks in that country, whatever may be their views on other subjects, that the prosperity of the poorer districts of Ireland may be greatly promoted by technical instruction in handicraft and in home industries. There is a conviction not less general, and it is one which our visits have fully confirmed in our minds, that the children and young people of Ireland of the laboring class possess great manual dexterity and aptitude, which only require to be developed in order to be useful to themselves and to those among whom they live. As evidence of this we need only to refer to the remarkable success of the Christian Brothers and to that of the ladies of religious orders in training children and young persons for handicrafts in industrial schools and institutions of a like nature. There appears to be no reason why similar instruction to that which is given in these schools should not be given elsewhere if the necessary funds and teachers are forthcoming. We have shown that instruction of this kind given on the continent to persons in remote districts, who would otherwise be idle, has added materially to their resources, both directly and by training them for employment in larger industrial concerns, and we have ascertained that no great expenditure of public money has been required in order to produce these effects.

Not only is instruction of this kind deemed to be desirable, but we have found that there is a willingness on the part of benevolent persons in Ireland to assist its promotion by subscriptions and in other ways. It is true that by some it has been proposed that the government should itself initiate, if it did not entirely charge itself with, this work, but we were happy to find there were others who would be quite satisfied if its utility received the imprimatur of the government and if the state offered rewards for the ascertained results of instruction of this kind. We are of opinion that successful work of this nature, whether it be conducted by individuals or societies or by religious bodies, deserves the recognition and reward of the government. We think it no part of our duty to state which are the home industries best adapted to the conditions of different parts of Ireland. Each locality will be able to form its own judgment in regard to this, and due weight should be given by the government to such local expression of opinion, payment in all cases being dependent upon the results obtained in the schools or classes. We do not think it would be possible for the government to train teachers for a variety of home industries, but it might contribute to the payment of such teachers appointed by the localities, and it would be expedient to establish a class of itinerant teachers for service in districts where resident instructors cannot be maintained.

These suggestions apply even in a greater degree to the instruction of girls than of boys.

Instruction in the use of tools in Irish primary schools.—We need scarcely point out that, if it be deemed desirable to introduce manual instruction in the use of tools in elementary schools at all, this would apply in an eminent degree to the primary schools of Ireland. It was stated in evidence before us that in some parts of Ireland ordinary handicrafts, like those of the mason, have become absolutely extinct. Whether the children remain in their own immediate localities or migrate to other parts of the country or emigrate to our colonies or to foreign countries, such instruction leading up to their apprenticeship as skilled laborers, instead of their fulfilling, as is now too much the case, the part of mere hewers of wood and drawers of water, would be of the greatest value to them. We are happy to find that the authorities of the national board of education in Ireland appreciate the importance of introducing instruction in manual work into their schools. They have already begun to give instruction of this kind to some few of their teachers, with a view to qualify them for imparting it to the children in the schools; but, in order that this instruction may be satisfactory, it is important that the training of the teachers themselves should be systematic and thorough; and, obvious as this might appear to be, we do not hesitate to impress it upon the minds of the authorities of the national board. Until the teachers are able themselves to give the instruction, it might be given by skilled and intelligent artisans. We have reason to believe that, whenever efficient teachers can be found, the national board will be prepared to pay for the results of manual teaching in the primary schools. It is scarcely necessary to say that our statement with regard to drawing, in reference to schools generally, applies with equal force to the Irish schools. We may remark that the progress of children in learning home trades will be much more satisfactory if they have been trained at school in the use of the ordinary tools for working in wood and iron and in drawing.

We shall deal with instruction in agriculture in Ireland in the succeeding subsection, in which we review the separate report of Mr. Jenkins and the evidence which we personally received in Ireland on that special branch of the subject.

Compulsory attendance in Irish primary schools.—While dealing with Irish education, we cannot refrain from expressing our satisfaction at having found that public opinion among all classes in Ireland is in favor of some measure for gradually making primary education in that country compulsory. The subject is one surrounded with difficulties of a nature which appear to us to place the discussion of its details beyond the scope of our commission. We consider, however, that we should not do our duty if we did not express our decided opinion that no marked progress in the direction of technical education can be effected in Ireland until primary education in that country has been placed on a proper footing.

AGRICULTURAL EDUCATION.

As stated at the commencement of this report, your commissioners did not think that an inquiry into the instruction of the industrial classes would be complete unless it included some notice of the instruction of the large and important class of agriculturists.

We were unable ourselves to conduct this branch of the inquiry, except partially in regard to Ireland, but we trust that those who read the report on agricultural education of our subcommissioner, Mr. H. M. Jenkins, the secretary of the Royal Agricultural Society of England, submitted herewith, will think that we have been well advised in placing the inquiry in his hands. As supplementary to his report, your commissioners refer to the Irish evidence in the appendix and to the narrative of their visits to the Royal Albert College, at Glasnevin, to the Munster Dairy School, and to parts of the south and west of Ireland. We have not inquired into the state of agriculture, as an art, abroad and at home; to have done this would have lengthened the inquiry beyond measure, and it was the less needed, as this branch of the question has been incidentally treated in the recent report of the royal commission on agriculture. It will, however, be seen from the report of our subcommissioner that those best able to form an opinion attribute a great and beneficial influence upon the progress of agriculture to the agricultural schools of various grades of the continent, and more especially to those like Hohenheim and Grignon, in which practice is combined with scientific teaching.

At a time like the present, when cheap railway and water conveyance of agricultural products from distant countries has completely changed the economical conditions of successful agriculture in Great Britain, it is of the greatest importance that those who are interested in the cultivation of the soil, whether as proprietors or as farmers, should not simply be familiar with existing practices at home, important as is such a familiarity, but that they should understand also the reasons which have caused these practices to prevail, in order to be able to decide to what extent they should continue to be pursued. They should likewise be acquainted with the nature and mode of cultivation of crops, the rearing and feeding of cattle, and the dairy practice of other countries.[1]

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[1] The practice of growing beet roots for the manufacture of sugar has been attended with most beneficial changes in continental agriculture. This cultivation is carried on in countries varying remarkably in the conditions of climate in regard to heat and moisture. Should the recovery of ammonia in the manufacture of coke and from the raw coal used in the blast-furnace be attended with the success which there is every reason to anticipate, the cheapening of nitrogenous manures may indicate some considerable changes in the agricultural practice of our own country.

Higher agricultural schools.—To impart knowledge of this description is the proper function of the agricultural school. In Great Britain the agricultural department of the normal school of South Kensington, the Royal Agricultural College of Cirencester, and the College of Downton are the only institutions for higher agricultural education, the former principally for training teachers, the two latter for the education of landowners, land agents, and farmers. The first of these has been so short a time in existence that no definite judgment of its results can be formed by the test of practical success or failure. But we agree with our subcommissioner in thinking that the complete course of four years at the normal school is inconveniently and unnecessarily long, that at least all students who propose to become associates should on entrance prove that they possess the amount of practical knowledge of agriculture which can be acquired by a year's residence on a farm, and that visits to farms and factories connected with agriculture during the recess should be encouraged and rewarded by scholarships to those who have profited by them. Our subcommissioner considers that colleges like those of Cirencester and Downton do not require "propping" by the state, but that scholarships tenable at those colleges might be given by the government to deserving students in the agricultural divisions of county schools.

Secondary agricultural schools.—These agricultural divisions which are intended by our subcommissioner to provide secondary agricultural instruction have still to be created. Mr. Jenkins proposes that farms should be attached to county schools, in which the pupils in the higher forms should be taught the principles and practice of farming and should take part in farming operations and the management of stock. The experience of schools of this kind on the continent and of some isolated attempts in this country shows that they cannot be self supporting. He proposes that the locality (the county) should equip the school and, we suppose, the farm attached to it, and that the government should contribute as liberally to the buildings as to those of schools of science. We can see no objection to the latter proposal, and we approve of the suggestion that the governing bodies of counties should have the power of establishing and maintaining agricultural schools or contributing thereto under proper conditions; we should be glad to see this power conferred on them by the proposed measure for reorganizing county government. But it would also appear to us that an active participation in the encouragement of secondary agricultural schools would be an object well worthy of our great national agricultural societies. Their funds have hitherto been devoted mainly to the encouragement by premiums of improvements in cattle breeding and in agricultural machinery. The commercial demand for animals of a high class and for implements of the best construction is now so great that any other than an honorary recognition of merit seems to be no longer required; and, if a portion only of the money now distributed in prizes were offered in aid of local subscriptions for the addition of an agricultural department to the existing and in many cases flourishing county schools, it is probable that so desirable an experiment as that proposed by our subcommissioner would very soon be carried into effect.

We are aware that the fact of the number of competitors for the Royal Agricultural Society's junior scholarships having been small may not encourage that great society to increase its efforts in the direction of agricultural education, but we believe with Mr. Jenkins that the fault lies in a great measure with the want of competent teachers, a want which is now in the course of being supplied by the Normal School of Science and otherwise. With respect to the classes in the "principles of agriculture" in connection with the Science and Art Department, which properly come under the head of secondary instruction, Mr. Jenkins is of opinion that "the attempt to teach the principles of a subject without first teaching its facts and phenomena is very much like trying to build an actual castle in the air." We quite agree in this opinion, and we consider it essential, even if it should involve some change in the program of the department, that the examiners should so arrange their questions as to ascertain as far as possible from his replies that the student is acquainted with facts to which the principles are applicable, just as in chemistry, for instance, the examiner would not be satisfied with a mere knowledge of the laws affecting the combinations of chemical elements and compounds, but would expect the student to be acquainted with the nature and properties of the substances entering into combination. Unfortunately, there is not the same room for a practical examination in agriculture as that which is now very properly required by the department in other sciences. On the whole it may be expected that young men following the profession of farmers and acquainted with farming practice will derive advantage from the classes in the theory of agriculture which are held in county towns.

Farm apprentice schools.—Of our subcommissioner's suggestions in regard to lower agricultural education in Great Britain, that which recommends the apprenticeship of youths to selected farmers is very important if it can be carried out. There can be no doubt that, if competent farmers can be found willing to receive boys and girls as apprentices (the girls in the dairy), and to allow a part of their time to be spent in continuing their school instruction, as is suggested by Mr. Jenkins, there could be no better training for the pupils. The French fermes-écoles and German Ackerbauschulen are examples of this kind of training.

Instruction in agriculture in rural elementary schools—His recommendations in reference to elementary schools in rural districts are more definite. We agree with him in thinking that instruction in the theory and practice of agriculture should, in Great Britain, as it already does in Ireland, after suitable introductory object lessons, form in the upper standards a part of the ordinary elementary subjects of rural schools, and should not be relegated to "class subjects;" and that, if time cannot otherwise be found for them, which we scarcely anticipate, some of the elementary subjects, such as the higher branches of arithmetic, should be transferred from the former to the latter category; and, further, that encouragement should be given, by way of grants, to practical work on plots of land attached to such schools. One good result of this would probably be that children, taking a more intelligent interest in farm work, would be less anxious to migrate from the country into the larger towns.

It is probable that, if a demand existed for a practical knowledge of agriculture on the part of teachers in rural schools, some of the farmers' sons who at present unhealthily increase the competition for farms would qualify themselves to become elementary teachers.

Agricultural education in Ireland.—The subject of agricultural education, which is of national interest in Great Britain, is a question of life and death for Ireland. We are happy to find that this is thoroughly felt both by the government and by the people. There is progress in all directions. The Albert Agricultural Institution at Glasnevin, near Dublin, no longer confines itself to the instruction of young men who intend to become farmers or land agents, but is training teachers who will disseminate a knowledge of sound theory and likewise of successful practice throughout Ireland; for the Glasnevin farms, the 6-acre as well as the 100-acre, are pecuniarily successful. The Munster Agricultural and Dairy School, especially its dairy department, as will appear from the evidence given before us, is ascertained and acknowledged by all classes to be rendering eminent service to the farmers of the county of Cork. Every elementary teacher in Ireland is required to pass an examination in agriculture, and the science and practice of agriculture are taught to all boys in the three upper standards (or classes, as they are called in Ireland) of all rural schools. Last year nearly 45,000 boys were examined in this subject. Small farms are attached to some of these schools, and special grants are made for proficiency in practical agriculture as tested on those farms. What is most encouraging is that the authorities of the national board themselves are not satisfied with what is being done. They are anxious that more encouragement should be given to the patrons of schools to furnish them with small example farms; they admit that when this is done results cannot be effectively gauged by their single agricultural inspector, Mr. Carroll, in addition to his duties as head of the Glasnevin institution. Your commissioners believe that the board would gladly see the successful experiment of the Cork Dairy School repeated in other parts of Ireland, each such school being established, as at Cork, by local effort, conducted by local managers in accordance with the wants of the locality, and supported in part by local subscriptions. Your commissioners trust that the treasury would see its way clear to encourage and aid such schools by grants out of imperial funds.

The evidence shows that the members of some boards of guardians are not satisfied with the prevailing absence of agricultural instruction for the children in the Irish workhouses. They desire that the plots of land attached to the workhouses should be more generally used than they now are, for this instruction.

At the same time the faults of the past are acknowledged. It was stated in evidence before us that the failure to introduce the cultivation of flax in the south of Ireland was due in a great measure to the ignorance of the instructors and to their having persuaded the people to grow it on unsuitable land, with the result of stunted crops, badly prepared, and scarcely fit for the commonest tissues.

That some of the instructors were ignorant we cannot doubt; but the example of Flanders and other countries shows that flax can be grown on the poorest soils, provided that they are liberally manured and receive such painstaking and assiduous cultivation as the peasants of those countries bestow on them. Failures, however, like that of flax culture in the south of Ireland will induce the promoters of agricultural education in that country to proceed with caution, and not to raise a prejudice against it by schemes for which the teachers are not qualified and the learners are not ripe.

CIRCULARS OF INFORMATION

OF THE

BUREAU OF EDUCATION.

No. 4—1885.

EDUCATION IN JAPAN.

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LETTER.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., October 13, 1885.

SIR: The international comparison of statistics is on the increase. Especially great effort is made at the present time to bring together the statistics of education in the different nations for comparison and study. Japan is recognized as one of the countries making most rapid progress in improvements in education. The relations between Americans and Japanese since the opening of Japan to foreign intercourse have been most cordial and the interchange of educational information between the two countries has been constant. Americans are watchful of all the indications of Japanese progress in educational improvements.

The accompanying papers give a correct and measurably complete idea of the organization and statistics of education in that country and are recommended for publication as a means of meeting the demand for the data they contain. Those who wish to learn more of the condition and appliances of Japanese education will gain many ideas by visiting the pedagogical museum of this Office, which has been enriched by many gifts from the Japanese Ministry of Education.

Very respectfully, your obedient servant,

JOHN EATON,
Commissioner.

The Hon. SECRETARY OF THE INTERIOR.

Publication approved.

H. L. MULDROW,
Acting Secretary.

EDUCATION IN JAPAN.

The following interesting account of education in Japan has been prepared and translated by the Japanese department of education:[1]

PART I.—THE SYSTEM.

ADMINISTRATION AND HISTORY.

Territorial organization.—Japan is divided into 9 circuits, viz: Kinai, Tōkai, Tōzan, Hokuroku, San-in, Sanyō, Nankai, Saikai, and Hokkai. The nine circuits are subdivided into 84 provinces which are, Yamashiro, Yamato, Kawachi, Idzumi, Settsu, Iga, Ise, Shima, Owari, Mikawa, Tōtōmi, Suruga, Kai, Idzu, Sagami, Musashi, Awa, Kazusa, Shimōsa, Hitachi, Ōmi, Mino, Hida, Shinano, Kōzuke. Shimotsuke, Iwaki, Iwashiro, Rikuzen, Rikuchū, Mutsu, Uzen, Ugo, Wakasa, Yechizen, Kaga, Noto, Yetchū, Yechigo, Sado, Tanba, Tango, Tajima, Inaba, Hōki, Idzumo, Iwami, Oki, Harima, Mimasaka, Bizen, Bitchū, Bingo, Aki, Suwo, Nagato, Kii, Awaji, Awa, Sanuki, Iyo, Tosa, Chikuzen, Chikugo, Buzen, Bungo, Hizen, Higo, Hūga, Ōsumi, Satsuma, Iki, Tsushima, Toshima, Shiribeshi, Ishikari, Teshio, Kitami, Iburi, Hidaka, Tokachi, Kushiro, Nemuro, Tishima. Besides there are two islands, viz, Ogasawara and Riukiu.

For the purpose of the administration of all these provinces, there are established the 3 fu (imperial city) of Tōkiō, Kiōto, and Ōsaka, and the 44 ken (prefectoral division of the empire) of Kanagawa, Hiōgo, Nagasaki, Niigata, Hakodate, Saitama, Gumba, Chiba, Ibaraki, Tochigi, Miye, Aichi, Shidzuoka, Yamanashi, Shiga, Gifu, Nagano, Miyagi, Fukushima, Iwate, Aomori, Yamagata, Akita, Fukui, Ishikawa, Toyama, Tottori, Shimane, Okayama, Hiroshima, Yamaguchi, Wakayama, Tokushima, Yehime, Kōchi, Fukuoka, Ōita, Saga, Kumamoto, Miyazaki, Kagoshima, Okinawa, Sapporo, and Nemuro. Under fu and ken, there are ku and gun which are subdivided into wards and villages for the purpose of local administration. Tōkiō is the seat of government, the Imperial Palace being also situated here. According to the census of the 15th year of Meiji (1882), the population of the country is 37,041,368, of which 5,750,946 are school population.

Political organization.—All the administrative affairs of the country are under the control of the Emperor. Under Daijōkwan or privy council there are 10 departments, —the departments of foreign affairs, interior, finance, war, marine, education, agriculture and commerce, public works, justice, and the Imperial household,—and also the senate, and the supreme court of judicature. These all form part of the administration of the country. There is a governor in each fu and ken, who exercises jurisdiction in accordance with the laws and regulations passed by the government, and in conformity with the directions of the various Ministers. In every gun or ku, the subdivision of fu or ken, there is a gunchō or kuchō, who controls that gun or ku under the superintendence of the governor, and in conformity with his directions. In a ward or village there is a kochō, who, under the supervision of gunchō or kuchō, takes charge of the administrative affairs in his jurisdiction.

In regard to education, there are school committees especially organized in wards or villages to conduct the various matters concerning the school attendance of children, the establishment and maintenance of schools, &c., under the supervision of the governor. They are nominated in each school district (details concerning the division of wards or villages into school districts will be found in the following pages) by the people of that district, and then the governor selects a certain number of those thus nominated. The tenure of office of the school committees is not less than 4 years and is fixed according to circumstances. Their number, salaries, &c., are determined by the ward or village assembly, with the approval of the governor. In case any committee man is incapable of discharging his duty after he has been appointed the governor causes another nomination to be made.

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[1] In connection with this article, see Circular of Information of the Bureau of Education, No. 2, 1875.

Persons qualified to serve as members of school committees or to take part in the nomination of the same must be males upwards of 20 years of age, possessing either lands or buildings and having both legal and actual residence within their respective school districts. The kochō takes part in the business of school committees in his own school districts.

When several wards or villages unite together and establish such schools as professional schools, middle schools, &c., independent of the limit of the school districts in which elementary schools are organized, they nominate special school committees within the limit of the school district thus formed. The regulations as to the mode of nomination, appointment, functions, &c., are the same as those adopted in the case of school committees of school districts.

Department of education.—The department of education is one of the ten departments, and the minister of education has control over all affairs connected with the education of the country, and with respect to these affairs he superintends the governors of fu and ken. There are senior and junior vice ministers who assist him in the discharge of his duties, secretaries who manage the special business intrusted to them under the orders of the minister, and subordinate officers who transact the various business assigned to them respectively.

The minister of education prepares drafts in regard to the establishment and abolition of such laws and regulations as are connected with education and submits them to the Emperor for approval; he also signs such laws and regulations and is responsible for them; and when any proceeding of a governor in relation to education is deemed improper, he has the right of nullifying it.

In order to carry on the business of the department the following bureaus are organized within the department, viz, bureau of special school affairs (to conduct business concerning higher and special education), bureau of general school affairs (to conduct business concerning general education), bureau of compilation (to conduct the business of writing and compiling books necessary to education), bureau of finance (to conduct financial business, constructions, and repairs), bureau of general business (to conduct business connected with official regulations for the officers of the several bureaus of the department, and the schools, &c., under its control, and various business not undertaken by the other bureaus), bureau of report (to conduct business concerning the reports, statistics, &c., of education), office of private secretaries (belonging to the private office of the minister and vice ministers and having charge of business concerning appointment, dismissal, promotion, &c., of officers under the control of the minister), documentary examiners' office (to examine the drafts of laws and regulations), office of prize affairs (to conduct business connected with the pensions of teachers and educational rewards), institute of music (to conduct business concerning inquiries as to singing and the improvement of music), office of report of the government gazette (to conduct the business of collecting and arranging in proper order the laws, regulations, writings, reports, &c., necessary to education, which are to be published in Kuwanpō, the government gazette). The chief of each of these bureaus is a secretary, and in some cases an assistant chief is also appointed.

The minister and vice ministers visit, from time to time, the schools of every fu and ken or send officers under them to every place to inspect the actual condition of education. These officers afterwards present to the minister reports on the result of their inspection. The governors are bound to present every year a detailed report of education within their jurisdictions, and the schools under the control of the department are also obliged to present a report on the result of instruction. The minister then arranges all these reports in proper order and, after making his own remarks and adding statistics, presents them to the Emperor as the Annual Reports of the Department of Education. This report is afterwards made public, to show the condition of local education.

The minister of education has organized an academy which is to inquire into matters concerning education and to discuss subjects connected with this science and art. The members of the academy are at present 21 in all, and are all good scholars of high reputation. The 7 original members were chosen by the minister himself and the rest have, from time to time, been elected by the vote of the members. The president and vice president are chosen by the members, their tenure of office being 1 year. As a rule the academy meets once a month in the department of education.

The directors, librarians, curators, teachers, &c., of the schools, libraries, museums, &c., under the control of the department of education are appointed and dismissed in different ways, according to their rank: those of the class of chokunin are appointed and dismissed by the Emperor himself; those of the class of sōnin, by the prime minister, after the matter has been submitted to the Emperor by the minister of education; and those of the class of hannin, by the minister himself. The following table shows the classes and annual salaries expressed in yen:[1]

Official title.	Official rank.	Amount of annual salary.							
		Yen.	*Yen.*	*Yen.*	*Yen.*	*Yen.*	*Yen.*	*Yen.*	*Yen.*
Rector	Chokunin	4,800	4,200	3,600	3,000				
Deans of faculties, directors, librarian, and curator.	Sōnin	3,000	2,400	2,100	1,800	1,500	1,200	960	
Professors	Chokunin	4,800	4,200	3,600	3,000				
	Sōnin	3,600	3,000	2,400	2,100	1,800	1,500		
Assistant professors	Sōnin	1,800	1,500	1,200	960				
	Hannin	1,200	960	840	720	600			
Instructors	Sonin	3,000	2,400	2,100	1,800	1,500	1,200	960	
	Hannin	1,200	960	840	720	600			
Assistant instructors	Hannin	600	540	480	420	360	300	240	
Teachers	Hannin	540	480	420	360	300	240	180	144
Clerks[1]	Hannin								

[1] The clerks are divided into ten classes, from the first to the tenth, and the official ranks and salary are the same as those of the clerks of the other government departments.

The amount of salary, from the professors down to teachers mentioned in the above table, may be more or less reduced in case the number of hours of instruction be less than that regularly prescribed.

Historical outline of education.—Owing to the lack of books and writings on the subject we do not know much about the ancient condition of education in our country, but since the time of Ōjin Tennō, who reigned towards 930 of the imperial era (A. D. 270), the successive emperors paid attention to education, encouraged it, and made its administration one of the principal government departments. In the reign of the Emperor Mommu (A. D. 673–686) the system of instruction was reformed, a university was established at Kiōto, and schools were also organized in various provinces. In the time of the Emperor Kammu (A. D. 782–805) education was completely organized and was in a very flourishing condition. During the periods of Hogen (A. D. 1156) and Heichi (A. D. 1159) political power was transferred to the military class, and education then declined; but after Tokugawa Iyeyasu established the military government at Yedo (the present Tōkiō) and engaged learned men and organized government schools, it began to flourish once more. From this time we see schools of Han organized within the dominions of the feudal lords, and also within their residences at the three capitals (Yedo, Kiōto, Ōsaka). There were also village as well as private schools in wards and villages. No rules being then established by the government, each of those schools followed its own course of instruction, but elementary education was given in every part of the country.

In the first year of Meiji (1868), the political power having been transferred to the Emperor, the Gakushiu-in (a school for nobles) was established in Kiōto. This was the first step towards the improvement of education after the political reform. In the second year of Meiji (1869) there was established in Tōkiō the university which had the control of educational matters over the whole country. In the fourth year of Meiji (1871) the university was replaced by the department of education, which takes charge of the educational system of the country. In the following year there was promulgated the code of education, by which the school districts and the modes of instruction in the university, middle schools, and elementary schools, were determined. The school age of children was also fixed at from 6 to 13 years of age. At this period a great many schools were established in various parts of the country and great improvements were made in the mode of instruction. In January of the eighth year of Meiji (1875) the school age of children was altered and fixed at from 6 to 14 years of age. In September of the twelfth year of Meiji (1879) the old code of education was abolished, a new code of education was passed, and many improvements were made in the system. In December of the thirteenth year of Meiji (1880) the code of education was revised and the sphere of business connected with education was considerably enlarged. This code is the one now in force.

SCHOOLS AND INSTITUTIONS FOR ADVANCED OR SPECIAL INSTRUCTION.

Kindergärten.—Kindergärten are designed to train children of either sex under school age, with a view of assisting home education and of laying the foundation of the school education, moral, physical, and intellectual development being the chief aim of the training. According to the investigations made in the fifteenth year of Meiji (1882), there are 7 Kindergärten, including government, public, and private establishments. One of them is established in the Tōkiō Female Normal School, and instruction is given by the students of that school. There are also independent Kindergärten, which are managed by the conductors.

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[1] The value of the yen is 85.8 cents.

The course of instruction generally comprises assembly, conversations on morals, conversations on various objects, block laying, paper plaiting, embroidery, drawing, counting, reading, writing, singing, games, &c., and the length of the course of study is 3 years. The regulations, &c., of Kindergärten are determined according to local conditions, and consequently are not uniform.

Elementary schools.—Elementary schools are those in which general education is given to children and at which attendance is compulsory. According to the computation of the fifteenth year of Meiji (1882), the total number of elementary schools in the country, including government, public, and private establishments, is 29,081.

An elementary school district may consist of a single ward or village, or of several wards or villages combined, which shall possess adequate resources for establishing and supporting elementary schools. The number of elementary schools to be organized in one school district is different according to its extent and the convenience of the pupils attending them. Thus, in some school districts there is only one elementary school and in others there are several elementary schools. Again, in some there is one elementary school with several branch schools; in others there are several elementary schools and several branch schools. In all cases the number is determined by the governor after consideration of the local conditions.

Although elementary schools ought to be established in every ward or village, yet, when from the local situation it is inconvenient for the pupils to attend them or when the pecuniary condition of a ward or village does not admit of the establishment of a school, the pupils may be taught by the system of itinerary instruction.

The course of study in elementary schools is determined by the governor in accordance with the standard outline of the course of study of elementary schools issued by the minister of education, modified according to local conditions, and is enforced after the approval of the minister of education. It is consequently not uniform.

The elementary school course is divided into three grades, viz, lower, intermediate, and higher grades. The lower grade course comprises the elements of morals, reading, writing, arithmetic; also, singing and gymnastics. The intermediate grade course comprises, in addition to the continuation of the elements of morals, reading, writing, arithmetic, and singing and gymnastics, the following subjects, viz: the elements of geography, history, drawing, natural history, physics; and, for the especial benefit of female students, sewing is provided. The higher grade course comprises, in addition to the continuation of the elements of morals, reading, writing, arithmetic, geography, drawing, natural history, and singing and gymnastics, the following subjects, viz: the elements of chemistry, geometry, physiology, and political economy; while for the especial benefit of female students, domestic economy is substituted for political economy. The length of the course of study is 3 years in the lower and intermediate grades and 2 years in the higher grade; thus the whole length of the three courses extends over 8 years.

Although the courses of elementary schools are such as mentioned above, yet some subjects may be added or omitted in accordance with local conditions, the difference of sex, &c.; and in some cases the elements of agriculture, industry, commerce, &c., may be added. But in no case are morals, reading, writing, or arithmetic to be omitted.

Teachers of elementary schools must be upwards of 18 years of age and must possess either the certificates of normal schools, teachers' licenses, or certificates of qualification in a certain subject, given by the governor of fu or ken. The certificate of normal schools is valid for 7 years from the time of granting it, and available throughout the country to obtain the position of a teacher in elementary schools; while the teachers' licenses given by the governor are only valid for a period not exceeding 5 years, and are only available within the jurisdiction in which they are given.

The teachers' license is given by the governor after examination made as to the knowledge of the candidates, in accordance with the directions for granting teachers' licenses issued by the minister of education, and, according to their capacity, the license enables them to teach one of the three courses of elementary schools. In any locality where no teacher can be found qualified for any one of these three courses, then those qualified for any one or several subjects may be substituted. Scholars eminent in learning who can teach morals well, or those who have a good knowledge of agriculture, industry, commerce, &c., may obtain teachers' licenses for the particular subject without examination.

All children of school age, whether male or female, must attend elementary schools[1] and receive instruction there, except children who are ill; children whose relations are ill, and who have no other persons to attend to them; children who have physical disabilities; children whose families are poor (this last is limited to those cases only where there are no schools established for the accommodation of such children); and children who are receiving the instruction of the elementary course at home. But those who have some reason's, such as studying some other subjects, or who are engaged in occupations after completing the 3 years' course of elementary instruction, may be specially excused from attendance at elementary schools.

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[1] Children who have not been vaccinated or who are affected by a contagious disease are not admitted to the schools.

The business connected with compulsory education is conducted by the school committees under the supervision of the gunchō or kuchō. The school committees are bound at the end of every year to examine children of school age in their respective school districts, and if they find any child who does not attend school without good cause, they must compel his parent or guardian to send him to school or examine into the validity of the excuse and decide the matter, subject to the approval of the gunchō or kuchō.

Middle schools.— Middle schools are organized according to the local conditions of each fu and ken and in conformity with the general regulations of middle schools issued by the minister of education. Their object is to give higher instruction in the common branches of study, so as to prepare students for liberal pursuits or for the more advanced schools. According to the statistical calculations of the fifteenth year of Meiji (1882), the number of middle schools is 172, including both public and private institutions. The course of instruction is determined in accordance with the standard outline of the course of study of middle schools issued by the minister of education. The course of study is divided into two grades, viz, lower grade and higher grade. The course of the lower grade comprises morals, Japanese and Chinese literature, English language, arithmetic, algebra, geometry, geography, history, physiology, zoölogy, botany, physics, chemistry, political economy, book-keeping, writing, drawing, singing, and gymnastics. The course of the higher grade comprises, in addition to the continuation of the lower grade course in morals, Japanese and Chinese literature, English language, book-keeping, drawing, singing, and gymnastics, the following subjects, viz: trigonometry, mineralogy, and Japanese law; in this grade, physics and chemistry are also taught.

According to local conditions, a general literary course and a general scientific course may be established in addition to, or instead of, the higher grade course; and also such special branches of study as agriculture, industry, commerce, &c., may be taught. The English language may be omitted or the German or French language may be substituted for English. The length of the course of study is 4 years in the lower grade and 2 years in the higher grade, the whole course extending over 6 years. However, the length of the course of study may be lengthened or shortened by any period not exceeding 1 year.

In order to provide a model for middle schools, the minister of education established the middle school at Ōsaka. The course of study is divided into two grades, viz, lower and higher grades.

The course of the lower grade comprises morals, Japanese and Chinese literature, English language, arithmetic, algebra, geometry, geography, history, physiology, zoölogy, botany, physics, chemistry, political economy, book-keeping, writing, drawing, singing, and gymnastics. The course of the higher grade comprises, in addition to the continuation of morals, Japanese and Chinese literature, English language, book-keeping, drawing, singing, and gymnastics, the following subjects, viz: trigonometry, mineralogy, and Japanese law; physics and chemistry are also taught. The length of the course of study is 4 years in the lower grade and 2 years in the higher grade, the whole course extending over 6 years.

University. — There is only one university, called Tōkiō Daigaku, which is under the control of the department of education. Its object is to give instruction in the special branches of study; it consists of the four departments of law, science, medicine, and literature.

In the department of law a course of study is provided to teach students principally Japanese law, English and French law being added. There is also a special course of instruction which is provided to give students a more simple course of study. The length of this course is 3 years. But special instruction will be given for 1 year to those who desire to learn law more fully after they have completed the 3-year course.

In the department of science a course of instruction is provided in mathematics, physics, chemistry, biology, astronomy, engineering, geology, mining, and metallurgy.

In the department of medicine a course of instruction is provided in medicine and in pharmacy, and a special course is also provided. The object of the course in medicine is to train students for the degree of Igakushi, and the length of the course of study is 5 years; but the object of the special course in medicine is to train students as practical physicians, and the length of the course of study is 4 years. The length of the course of study in pharmacy is 3 years.

In the department of literature a course of instruction is provided in philosophy, political economy, political science, and Japanese and Chinese literature.

The length of the course of study is 4 years in each department, except in that of medicine.

Attached to the department of literature there is Koten Kōshiu Ka, which is divided into two courses, viz, the Japanese classic course, and the Chinese classic course. In the Japanese classic course students are taught ancient Japanese laws, ancient and modern history, historical changes of institutions, changes of language, &c.; and in the Chinese classic course they are taught ancient Chinese law, Chinese classics, history, doctrines of several scholars, Chinese literature, &c. The length of the course of study is 3 years in the Japanese classic course and 4 years in the Chinese classic course.

Attached to the university there is Yobimon (preparatory department) of the Tōkiō Daigaku, which consists of 2 schools, viz, the principal school, which is situated within the departments of law, science, and literature, and the branch school, which is situated within the department of medicine. The principal school is intended to prepare students on such subjects as are necessary for entering one of the three departments of law, science, and literature, and the branch school is intended to prepare students on such subjects as are necessary for entering the department of medicine. The length of the course of study is 3 years in the principal school and 4 years in the branch school.

In the department of science there are astronomical and meteorological observatories which are both situated at Motofujichō in Hongō, Tōkiō, at 35° 42′ north latitude and 139° 46′ longitude east of Greenwich. There are also botanical gardens and museums. In the botanical gardens, several thousands species of plants are grown and cultivated; in the museums, originals, specimens, and models relating to physics, chemistry, and natural history are arranged.

In the department of medicine there are two hospitals to which sick people are admitted, and in certain cases they are taken care of gratuitously. These are provided to enable the students to gain practical knowledge of their subject.

Besides, there are the military academy, under the control of the war department, and the engineering college, under the control of the department of public works. The former is intended to train those persons who desire to become officers of infantry, cavalry, or artillery, or military engineers in such a way as to make them fit to discharge the duty of staff officers in the future. The latter is intended to train engineers who will be employed by the department of public works. A course of study is provided in civil engineering, mechanical engineering, ship building, telegraphy, house building, practical chemistry, mining, and metallurgy. The length of each course of study is six years, of which the first two years (called the preparatory course, in which students are prepared for entering one of the special courses) are confined to instruction in the English language, geography, elementary mathematics, elementary mechanics, elementary physics, chemistry, and drawing (geometrical and mechanical), &c.; and the last two years are spent in the practical application of the knowledge already acquired.

Normal schools.—Normal schools, intended to train students as teachers of elementary schools, are to be established in every fu and ken according to the general regulations of normal schools issued by the minister of education. According to the computation of the fifteenth year of Meiji (1882), the number of public normal schools is 76, with some branch schools annexed to them.

The regulations as to the course of study are determined according to the standard outline of the course of study of normal schools issued by the minister of education. The course of instruction is divided into three grades, viz, lower, intermediate, and higher grades. The lower grade course comprises morals, reading, writing, arithmetic, geography, physics, science of education, school management, practice of teaching, singing, and gymnastics. The intermediate grade course comprises morals, reading, writing, arithmetic, geography, history, drawing, physiology, natural history, physics, chemistry, geometry, book-keeping, science of education, school management, practice of teaching, singing, and gymnastics. The higher grade course comprises morals, reading, writing, arithmetic, geography, history, drawing, physiology, natural history, physics, chemistry, geometry, algebra, political economy, book-keeping, Japanese law, mental philosophy, science of education, school management, practice of teaching, singing, and gymnastics. The length of the course of study is 1 year in the lower grade, 2½ years in the intermediate grade, and 4 years in the higher grade; but, according to local conditions, the course of instruction may be modified, and agriculture, industry, commerce, &c., may be added. Again, in female normal schools, Japanese law and political economy may be omitted, or some other subjects may be introduced, and sewing and domestic economy may be added. Thus the course of instruction comprises morals, reading, writing, arithmetic, geography, Japanese history, drawing, natural history, physics, sewing, domestic economy, etiquette, science of teaching, singing, and gymnastics.

In some fu and ken teachers' institutes are organized for the purpose of improving the teachers of elementary schools and, in others, supervising teachers are appointed

intend the mode of instruction in elementary schools, &c. The regulations
ie of carrying out these plans must be submitted for the approval of the min-
education.

ied to each normal school there is an elementary school, which is provided
o the normal school students to gain practical experience in teaching, and
lso serves as a model for elementary schools.

ler to provide a model for normal schools the department of education
ied two schools in Tōkiō, one of which is for the instruction of male stu-
d is called the Tōkiō Normal School, and the other is for the instruction of
tudents, and is called the Tōkiō Female Normal School.

ject of the Tōkiō Normal School is to train students as teachers of the whole
f elementary schools, middle schools, normal schools, &c.; therefore they are
he elementary normal school course and the middle normal school course.

ementary normal school course comprises morals, reading, writing, arithme-
graphy, history, drawing, physiology, natural history, physics, chemistry,
y, algebra, political economy, book-keeping, agriculture, industry, commerce,
o law, mental philosophy, science of education, school management, practice
ing, singing, and gymnastics. The length of the course of study is 4 years.

iddle normal school course is divided into two grades, viz, lower and higher
The lower grade course comprises morals, Japanese and Chinese literature,
language, algebra, geometry, physical geography, physiology, zoölogy, bot-
ieralogy, physics, chemistry, political economy, history, drawing, mental
hy, science of education, practice of teaching, singing, and gymnastics.
th of the course of study is 4 years. The higher grade of the course is not
eration.

ied to this normal school there is an elementary school, which is provided for
tudents to gain practical experience in teaching and which also serves as a
r elementary schools for boys. The course of instruction and the length of
se of study do not differ very much from those stated in the standard out-
he course of study of elementary schools issued by the minister of education.

Tōkiō Female Normal School instruction is given in the elementary normal
ourse for girls with the object of training students as teachers of the whole
f elementary schools for girls. The course of instruction comprises morals,
composition, writing, arithmetic, geography, Japanese history, drawing,
iistory, physics, chemistry, science of education, practice of teaching, sewing,
, domestic economy, singing, and gymnastics. The length of the course
is 4 years.

ied to this school there is a higher female school, in which higher instruction
in the common branches of study with the object of developing the various
irtues. The course of instruction is divided into the lower and higher
The lower grade course comprises morals, reading, composition, writing,
ic, geography, Japanese history, natural history, physics, drawing, sewing,
, singing, and gymnastics. The higher grade course comprises, in addition
ntinuation of the lower grade course in morals, reading, composition, writ-
ving, sewing, etiquette, singing, and gymnastics, the following subjects, viz:
y and domestic economy. The length of the course of study is 3 years in
r grade and 2 years in the higher grade.

ed to the Female Normal School there is also an elementary school for girls,
provided to enable female normal students to gain practical experience in
and which also serves as a model for elementary schools for girls. The course
ction is divided into the lower and higher grades. The lower grade course
s the elements of morals, reading, composition, writing, arithmetic, drawing,
also, singing and gymnastics. The higher grade course comprises, in addi-
ie continuation of the lower grade course in the elements of morals, reading,
ion, writing, arithmetic, drawing, sewing, singing, and gymnastics, the fol-
ubjects, viz: the elements of geography, Japanese history, natural history,
and etiquette. The length of each course of study is 3 years.

there is a Kindergarten annexed to the Female Normal School, to which chil-
ither sex under school age, but upwards of 3 years old, are admitted. In-
is given with the object of cultivating their moral nature, developing their
constitutions, and improving their intellectual faculties. The course of
comprises assembly, conversation on morals, conversation on various things,
ing, stick laying, ring laying, peas work, bead joining, paper plaiting, paper
paper perforating, embroidery, paper cutting, drawing, counting, reading,
singing, and games. The length of the course is 3 years. This is provided
the female normal students to gain practical experience in teaching and it
s as a model for other Kindergärten.

ficate is given by the school to every student who completes the course of
he normal schools. Thus the students who complete the higher grade course
lied as teachers of any elementary school course; those who complete the

intermediate grade course, as teachers of the intermediate and lower grade courses of elementary schools; and those who complete the lower grade course, as teachers of the lower grade course of elementary schools. The certificate is valid for 7 years. When there is manifest evidence as to deep knowledge, thorough experience in the ways of teaching, and good conduct, a new certificate (available for 7 years or for life) may be given without examination, even after the expiration of 7 years.

Professional schools.—Professional schools are organized according to the local condition of fu and ken. There are already several professional schools in different localities. According to the computation of the 15th year of Meiji (1882), there are 34 public schools and 36 private schools of this kind. Thus there are schools of medicine, pharmacy, law, science, literature, drawing, navigation, mathematics, architecture, porcelain, &c., of which the schools of medicine are most numerous.

The regulations as to the course of instruction in the schools of medicine and pharmacy are determined according to the general regulations of the medical and pharmaceutical schools issued by the minister of education. Therefore in the school of medicine the length of the course of study is 4 years for physicians who pursue the regular course of study and 3 years for those who desire to complete their study in a short time. The school of pharmacy is at present within the school of medicine, and the length of the course of study is over 3 years for pharmaceutists who pursue the regular course of study and 2 years for those who desire to complete their study in an easy course.

There are two professional schools established by the department of education. One is called the Tōkiō Foreign Language School and the other the Gymnastic Institution.

In the Tōkiō Foreign Language School, the French, German, Russian, Chinese, and Corean languages are taught (instruction in the English language is included in the course of the Chinese language). The length of each course of study is 5 years, of which 3 years are occupied in the lower grade course and 2 years in the higher grade course.

Within this school it is intended to provide a commercial school, in which higher instruction will be given in the commercial course, with the object of training students as teachers of that course as well as preparing them to engage in commerce and to improve its condition. It is also intended to serve as a model for commercial schools. But as it is not yet in operation the course of instruction will not be mentioned here.

The Gymnastic Institution is organized for the purpose of training students in the art of gymnastics. Instruction is given according to the three following divisions, viz: (1) Teachers of normal schools of fu and ken and other schools who intend to become teachers of gymnastics are instructed in gymnastics (light exercise, out-door exercise, heavy exercise, rowing, manœuvres of infantry), physical education, and physiology; the length of the course of study is about 6 months. (2) The students and scholars of all the schools in Tōkiō under the control of the department of education are instructed in the same kind of gymnastics as mentioned above. (3) Teachers of schools, &c., who learn gymnastics during their leisure hours are instructed only in light exercise, out-door exercise, and heavy exercise.

There are also several schools organized by other departments. They are established for the purpose of giving instruction in various technical subjects and are under the control of their respective departments. Thus, the war department has a school of military officers, a normal school for the officers of infantry, and a normal school for subordinate military officers, in all of which instruction is given in military affairs concerning infantry, cavalry, artillery, and engineering, to train students as military officers.

The marine department has a naval school, in which instruction is given in artillery, navigation, and seamanship, and a school of marine engineers, in which students are instructed in the science of the steam engine.

The department of agriculture and commerce has a school of forestry, in which students are taught the science of forestry, and a nautical school, in which instruction is given in the art of navigation. In the department of public works there is a telegraph school, attached to the telegraphic bureau, in which students are taught electricity, telegraphy, and the English and French languages. In the department of justice there is a law school, in which students are taught law.

Agricultural schools.—Agricultural schools are organized according to the local conditions of fu and ken, in conformity with the general regulations of the agricultural schools issued by the minister of education. According to the computation of the 15th year of Meiji (1882), there are ten schools, including both public and private institutions, in all of which students are taught such subjects as are necessary for agriculture. The course of instruction and the length of the course are determined according to local conditions, and consequently are not uniform. There are also institutions called agricultural institutes, &c., in which students are chiefly taught practical business and also a simple course of study.

There are two schools established by the department of agriculture and commerce. One of them is called the Agricultural School of Komaba (so named because it is situated at Komaba, gun of Ibara, Tōkiō-Fu), in which students are instructed in the science of agriculture, in veterinary science, and agricultural chemistry. The other is called the Agricultural School of Sapporo (so named because it is at Sapporo, under the ken of the same name), in which students are taught the cultivation of land and stock rearing.

Commercial schools.—Commercial schools are organized according to the local conditions of fu and ken, in conformity with the general regulations of commercial schools issued by the minister of education. According to the computation of the 15th year of Meiji (1882), there are four public schools and two private schools, in all of which students are taught in such subjects as are necessary for commerce. The course of instruction and the length of the course of study are determined according to local conditions, and are consequently not uniform. There are institutions called business schools, &c., in which students are taught chiefly the practical business of commerce and also a simple course of study.

Industrial schools.—Industrial schools are also to be established according to the local conditions of fu and ken. There is as yet no public or private school of this kind, and students therefore learn practical business at the industrial factories.

There is one industrial school established by the department of education. It is called the Tōkiō Industrial School. Its object is to train students as teachers of industrial schools or as foremen of laborers or directors of factories. The course of instruction is divided into two classes, viz, chemical technology and mechanical technology. The length of each course of study is three years. There is also a preparatory course, in which students are taught mathematics, physics, chemistry, drawing, and morals, to prepare them for the higher course. The length of the course of study is one year.

Higher female schools.—Higher female schools are organized according to the local conditions of fu and ken. The object of these schools is to give to girls who have completed the elementary school course such higher instruction in the common branches of study as is suitable for them and thus to train them as women of virtue. According to the computation of the fifteenth year of Meiji (1882), there are five such public schools. The course of instruction comprises morals, composition, writing, arithmetic, geography, Japanese history, natural history, physics, chemistry, drawing, sewing, domestic economy, etiquette, music, and gymnastics, and at the same time the mode of Kindergarten training is taught. The length of the course of study in these schools is not to exceed five years, but is not uniform.

Miscellaneous schools.—A great number of miscellaneous schools are organized in different localities. Thus there are Japanese schools (teaching history, law, literature, and the poetry of Japan), Chinese schools (teaching morals, politics, history, literature, and reading Chinese books), English schools (teaching English language and reading English books), French schools (teaching French language and reading French books), German schools (teaching German language and reading German books), schools for the blind and dumb, schools of book-keeping, schools of handiwork for females, schools of arithmetic (teaching arithmetic only), schools of writing (teaching rules of writing, handling pens, &c.), &c., of which the Chinese schools are most numerous, the reading schools stand next, and then come schools of handiwork, writing, and arithmetic. According to the computation of the fifteenth year of Meiji (1882), the number of public schools is 83 and that of private schools is 1,131. The length of the course of study is different according to the organization of the schools.

The ranks and salaries of the directors, teachers, &c., of the several schools organized by the various departments other than that of education are determined by the ministers of the respective departments and are therefore different one from another.

The ranks and salaries of the directors and teachers of public schools are determined, subject to the approval of the minister of education, by the governor of fu or ken.

FUNDS, SCHOOL LANDS, AND AIDS TO ADVANCEMENT.

Text books.—In all cases school text books are chosen with great care; but with respect to those books especially concerning general education the department of education takes the responsibility of examining them and ascertaining whether they are fit for text books or not, and from time to time informs the governors of the result of the examination, which will assist them in choosing text books. Also, with respect to those books concerning morals, the department of education indicates the general principles of compiling them and requires special attention in publishing them.

The books examined from the thirteenth year to the sixteenth year of Meiji (1880 to 1883) are 684 copies or 1,668 volumes, of which 462 copies or 1,054 volumes are those to be used in elementary schools and 222 copies or 614 volumes are those to be used in middle and normal schools.

Again, the department of education compiles and publishes text books to serve as models for authors. In order to improve the books used in the schools, it is intended to make regulations as to the examination of such books and to examine them in a more precise manner.

Libraries and educational museums.—Libraries and educational museums are also organized in different localities. There are 19 libraries which are said to be in good organization. There are also several reading rooms which are provided within the schools, &c., for the use of teachers and students. They are also opened to the public. The object of educational museums is to arrange in order objects concerning education and to provide them for the benefit of educators. There are 4 museums which are worthy of notice; but all others are small rooms of schools, in which apparatus for chemistry and physics, specimens of natural history, &c., which are used in instruction, are provided. They are also shown to the public.

There are two establishments organized by the department of education. They are the Tōkiō Library and the Tōkiō Educational Museum.

In the Tōkiō Library, all books useful for study, without distinction as to whether they are Japanese, Chinese, European, or American, are collected and shown to the public. Those who write or translate or compile books necessary to education are allowed to take any book out of the library by special permission granted by the minister of education.

In the Tōkiō Educational Museum, objects necessary to general education are collected for the benefit of persons engaged in education and they are also shown to the public. The objects arranged therein are all instruments and apparatus used in schools, specimens, models of natural history, text books, reference books for educators, &c. This establishment also provides specimens of animals, plants, and minerals, and models of educational instruments, &c., and supplies them at cheap prices to schools in different places. It also encourages the makers of apparatus to construct several kinds of apparatus used in chemistry and physics, and introduces them to schools in different localities, which desire to buy them. The progress of education is insured in this way.

The regulations and rules as to the course of instruction of every school above stated, Kindergärten, libraries, and educational museums which are organized by the departments, are determined, respectively, by the ministers of those departments; but anything which is very important is subject to the approval of the prime minister. The regulations and rules of schools organized by fu and ken are determined by the governors, subject to the approval of the minister of education, and those of schools established by wards or villages are determined by the school committees, subject to the approval of the governors. Those of private schools established by one or several persons are determined by the persons or person who organized them, but are subject to the approval of the governors.

Students sent abroad.—Many hundreds of students have at different times been sent abroad, some of them after having completed their course of study in the schools established by the several departments or by fu and ken: others were sent by the former feudal lords. Since the eighth year of Meiji (1875) 50 students have been sent abroad by the department of education, of whom 24 have already returned, having finished their study, and 4 came back on account of illness, without completing their study. Some students received diplomas at the universities abroad and others received rewards on account of successful examinations.

The number of students abroad is at present 22, of whom 17 are in Germany, 1 in Austria, 2 in England, 1 in France, and 1 in America. All of them are graduates of Tōkiō Daigaku, who were specially selected by the minister of education to pursue their studies more thoroughly.

Educational conventions.—In certain cases an educational convention is held for the purpose of inquiring into and investigating educational matters. Thus the minister of education on certain occasions calls together the heads of educational sections (officers under the governor) of fu and ken and the directors of schools established by fu and ken, &c., and inquires into the condition of education in their respective localities or points out to them general principles of education. The governors also hold in some cases a conference of officers in charge of education, the directors and teachers of schools, &c., under their jurisdiction, who discuss questions concerning education. Sometimes a united conference of several fu and ken is held for the same purpose. Again in different places assemblies of officers of wards or villages, school committees, directors, and teachers of schools, &c., are frequently held to consider the business of education or to consult about school management, the mode of instruction, &c.

Encouragement of education.—For the encouragement of local education, the minister of education gives books and instruments to officers engaged in education who have performed special services, to students or pupils of both public and private schools who have been specially deserving, and to both public and private schools, Kindergärten, libraries, educational museums, &c., which are considered to be of special benefit to the public. In different places rewards are given at the time of examination to students who pass the examination successfully.

Educational funds.—The funds of the schools, &c., established by the different departments are supplied from the national exchequer, and consequently out of the appropriation money of the respective departments. The funds of schools, &c., established by fu and ken are supplied from the local taxes paid by the people of the respective fu and ken. In some cases the money contributed and the fees of instruction are added to the local tax to make up the fund, or sometimes a part of it is supplied from the national exchequer. The funds of schools, &c., established by wards or villages are supplied from the public funds of wards or villages; also, sums of money contributed and the fees of instruction or money realized from school land are added to the fund. Private schools are maintained by the fees of instruction or by the private money of one or several persons.

School lands.—The grounds occupied by institutions which are organized by the different departments are in every case government lands. The grounds occupied by institutions established by fu or ken are in most cases also government lands; but, in a few cases, land jointly owned by the people is added to the government land. The grounds occupied by institutions organized by the wards or villages are jointly owned by the people or are sometimes the property of private individuals.

When wards or villages establish at the public expense any school, such as elementary schools, middle schools, professional schools, agricultural schools, commercial schools, industrial schools, government land not in use, if there is any in such place, is granted on the request of the people of that locality without any payment, in the following proportion, viz, 500 tsubo (1 tsubo is about 36 square feet) for each elementary school and 1,000 tsubo for any other school. The land actually occupied by the schools is exempted from taxation. Again, the land possessed by all public agricultural schools and provided for practical or experimental use is exempted from taxation in the proportion of 5 chō (3,000 tsubo) per school, and when government land is required to provide farms for practical or experimental use, land not exceeding 5 chō is granted for such use without any payment of rent.

ADDENDUM.

Tōkiō Commercial School.—In the month of March of the 17th year of Meiji (1884) the public commercial institution, which belonged to the fu of Tōkiō, was transferred to the department of agriculture and commerce, under the name of the Tōkiō Commercial School. This school is designed to give instruction in such various branches of study as are deemed necessary for commerce.

School for the nobility.—In the month of April, the Gakushiūin (Nobles' School) was transferred to the imperial household department, and, although this school was originally established by the kuazoku (nobles) and managed by them under the superintendence of the minister of education, the imperial decree has placed it under the direct control of the same department. This school is designed to instruct, chiefly, the children of the kuazoku (princes, marquises, counts, viscounts, and barons) in such branches of instruction as are most suitable for developing their intellectual faculties (in some cases the children of shizoku and heimin may also be admitted into this school); and the school is divided into the male and female courses. The male course is subdivided into the elementary, middle, and special courses.

The elementary course includes the lower and higher grades, and the former is designed to instruct pupils not less than 6 years of age in such subjects as morals, reading, composition, writing, arithmetic, object teaching, singing, and the easy part of gymnastics, the length of the course extending over 3 years; and the latter, to instruct pupils not less than 9 years of age in the elements of drawing, geography, history, physics, and gymnastics, in addition to the continuation of the subjects of the lower grade. In the subject of reading, it is specially required that one foreign language shall also be taught. The length of the course extends over 3 years, making the total course 6 years.

The middle school course is divided into three grades, viz, the lower, intermediate, and higher grades, and the subjects of study include moral, literary, and military exercises. The lower grade is designed to instruct students not less than 12 years of age. The literary branch includes reading (Japanese and Chinese), composition, mathematics, geography, history, biology, and drawing; and the military branch, gymnastics, manœuvres, swimming, the length of the course extending over 3 years. The intermediate grade is designed to instruct students not less than 15 years of age. The literary branch includes (in addition to the continuation of the subjects of the lower grade) physics, chemistry, biology (zoölogy and botany), and mineralogy, and the military branch includes (in addition to the continuation of the subjects of the lower grade) rifle exercise, fencing, and riding, the length of the course extending over 3 years. The higher grade is designed to instruct students not less than 15 years of age. The literary branch includes (in addition to reading, composition, and mathematics) the general principles of history, political economy, law, politics, and philosophy; the length of the course extends over 3 years, making 9 years for the completion of the three grades.

The special course is established for such students as are not less than 20 years of age and possess attainments equivalent to those of the graduates of the middle school course of this school, to further their study in such higher subjects of this course as politics, law, political economy, philosophy, &c. Although the length of the course is not fixed, yet it shall neither be shorter than 3 nor longer than 10 years.

The female course is as yet unsettled.

Changes at the university.—In the month of April of the same year the name of the "Principal and Branch Schools" of the Preparatory Department of the Tōkiō University was abolished, alterations were made in the regulations as to the course of instruction, and the length of the course was made to extend over 4 years; and students who desire to be admitted to the departments of law, science, medicine, or literature are made to pursue the same preparatory course of study.

In the month of May of the same year a course of naval architecture was organized within the department of science of the Tōkiō University. This is designed to prepare students as naval engineers, who shall be employed in naval architecture and in the construction of marine engines. The subjects of study to be pursued are mathematics, physics, dynamics, naval architecture (both theoretical and practical), kinematics and mechanism, steam engines, strength of materials and structures, thermodynamics, hand and machine tools, marine engines, naval ordnance, drawing, working drawing, metallurgy of iron, French (taught only for the present), practical exercises, and designs of hulls and engines. The length of the course extends over 4 years, and during the first year the students are taught according to the first year program of the department of science.

Higher commercial school at Tōkiō.—In the month of June of the same year the course of instruction of the higher commercial school, attached to the Tōkiō Foreign Language School, was framed. The subjects of study are as follows: morals, Japanese and Chinese literature, commercial correspondence, commercial arithmetic, book-keeping, algebra, geometry, physics, chemistry, commercial geography, writing, drawing, commercial economy, commercial history, commercial law, commercial practice, and a foreign language, (English, French, German, Russian, Chinese, or Corean). The length of the course extends over 4 years.

Lectures at the Tōkiō Educational Museum.—In the same month of the same year, an institute of scientific lectures was organized within the Tōkiō Educational Museum, the object of which is to provide a course of lectures for those who are connected with and most interested in educational affairs, on such topics as are necessary for education and as may help to develop the intellectual faculties. The lectures are given by the gagushi (graduates of the university) and are illustrated by means of various instruments, specimens, &c., which are arranged in the museum; and those who are permitted to attend such lectures are for the present teachers and instructors of elementary, middle, and normal schools or those who are otherwise connected with educational affairs. This institute was established to promote the further improvement of the methods of instruction, for in many elementary schools, &c., of various localities, explanations are, owing to the total absence of necessary apparatus and specimens, only made from books, or, as in some schools, the apparatus and specimens are not sufficient for the explanations needed.

Licensing of middle and normal school instructors.—In the month of August of the same year, the regulations concerning the license of middle and normal school instructors were framed, so that those who are entitled to receive appointments as instructors in such schools must possess the diplomas of the middle normal school course or of the university course, or they must obtain such license after examinations made by the department of education into their conduct and attainments. The subjects of these examinations are morals, Japanese and Chinese literature, English, French, German, arithmetic, algebra, geometry, trigonometry, analytical geometry, mechanics, surveying, astronomy, physiology, zoölogy, botany, mineralogy, geology, physics, chemistry, geography, history, political economy, Japanese law, mental science, logic, science of education, writing, drawing, book-keeping, singing, gymnastics, agriculture, industry, and commerce. Candidates shall be examined on one or more of these subjects according to their choice, the methods of instruction being at the same time examined on; and the license for one or more of these subjects thus examined shall be given them. But those who are eminent in learning, commanding the respect of others and having sufficient ability to give moral instruction, or those who, having been engaged as instructors for a long period or possessing diplomas on a certain subject or subjects, are well qualified as instructors on such subject or subjects, or those who, being preëminent in agriculture, industry, commerce, or some other subjects, are well qualified as instructors in such subject or subjects, may be appointed instructors without examination.

Learned societies.—Many learned persons in Tōkiō have organized themselves into societies for the purpose of scientific investigations, and in the provinces there are also individuals who are occupied in similar pursuits and in the discussion of educational matters; and the proceedings of most of the societies thus associated are published and distributed among their members or elsewhere. The following are the principal societies:

(1) Dai-Nippon-Kiōiku-Kwai (Educational Society of Japan). The object of this society is to encourage, improve, and advance education. It also assists the educational administration and inquires into sciences and arts and educational matters in general.

(2) Tōkiō-Fu-Kiōiku-Dan-Kwai (Tōkiō-Fu Educational Society);

(3) Chiba-Ken-Kiōiku-Kwai (Chiba-Ken Educational Society);

(4) Saitama-Ken-Shiritsu Kiōiku-Kwai (Saitama-Ken Private Educational Society);

(5) Niigata-Ken-Kiōiku-Gikwai (Niigata-Ken Educational Society).

The object of the above societies (2–5) is the improvement of education and of the methods of instruction in their respective localities.

(6) Djishin-Gaku-Kwai (Seismological Society). The object of this society is to investigate the phenomena of earthquakes and volcanoes.

(7) Senkō-Gakusha (Society of Specialities). The object of this society is to study and inquire into various special branches of science.

(8) Butsuri-Gakkwai (Society of Physics). This society has in view the exclusive study of the higher course of physics.

(9) Tōkiō-Sangaku-Kwaisha (Tōkiō Mathematical Society). The object of this society is to discuss the theory of higher mathematics and to translate and compile works on mathematics.

(10) Tōkiō-Futsubun-Kwai (Tōkiō French Language Society). This society is composed of French scholars, both Japanese and foreign, in order to promote sciences and arts and to encourage the study of the French language by the interchange of knowledge among the members.

(11) Tōkiō-Seibutsu-Gakkwai (Tōkiō Biological Society). The object of this society is to study biology in general.

(12) Rigaku-Kiōkwai (Society of Physics). This society is composed of professional scholars for the purpose of inquiring into the principles and of interchanging knowledge among the members.

(13) Nippon-Kōdōkwai (Japanese Society of Moral Science). The object of this society is to interpret the principles of morality and virtue by encouraging moral science.

(14) Butsurigaku-Yakujikwai (Society of Translating Technical Terms of Physics). This society aims at establishing a regular terminology for physics.

(15) Doitsugaku-Kiōkwai (German Language Society). The object of this society is to study laws, politics, and other sciences by encouraging the German language.

(16) Tetsugaku-Kwai (Philosophical Society). The object of this society is to study the philosophy of Europe and Asia.

(17) Hōgaku-Kiōkwai (Law Society). The object of this society is to study law.

(18) Tōkiō-Kwagakukwai and Yakugokwai (Chemical Society). The object of this society is to study chemistry and at the same time to establish a regular terminology for the science.

(19) Kōgaku-Kwai (Engineering Society). This society aims at studying any matters concerning engineering.

(20) Bungaku-Kwai (Society of Letters). The object of this society is to inquire into politics, political economy, philosophy, and all the branches of Japanese and Chinese literature.

(21) Kanano-Kwai (Society of Japanese Literature). The object of this society is to study the etymology and syntax of the Japanese language, and also to teach how to construct common sentences with the Japanese characters i-ro-ha.

(22) Ri-i-gaku-Kōdankwai (Society of Physics and Medicine). The object of this society is to teach the principles of physics and medicine, and to diffuse such general knowledge among the public.

(23) Indo-tetsugaku-inmiogaku-Kōgikwai (Society of Hindoo Philosophy, and Inmiogaku, a kind of philosophy). The object of this society is to study Hindoo philosophy and the Inmiogaku.

(24) Dai-nippon-Shiritsu-Yeiseikwai (Japanese Private Society of Hygiene). The object of this society is to to interpret the laws of public health and to diffuse a general knowledge of sanitary matters.

(25) Tōkiō-igaku-kwai (Tōkiō Medical Society). This society aims at the study of medicine.

society is to inquire into marine products in general, and, by an interc
edge among the members, into the means of multiplying and improvi

PART II.—STATISTICS.

.—*Showing the amount of educational expenses (among the city-district, ward, or*
illage rates) decided by the assemblies for the fifteenth year of Meiji (1882).

This table is a rough calculation of the educational expenses of the city-district, ward, or
es for the 15th year of Meiji (1882), according to the reports from the various fu and ken.
h city-districts, wards, and villages are mentioned in the table as pay educational expenses,
four ken of Chiba, Shimane, Kōchi, and Kagoshima there are some city-districts, wards,
es where the rates for educational expenses are not levied, such expenses being disbursed
nterest on funds, &c.; while in some wards and villages of the two ken of Okayama and
o educational expenses are required, owing to the fact that the population is too scattered
h any school; and also in the islands of Ogasawara, under the fu of Tōkiō, educational ex-
paid out of the Treasury, and rates are not, therefore, levied on the people of the city-dis-
ds, and villages of the fu.
e two ken of Miyagi and Yamanashi no reports have been received; and these ken are,
tly, here omitted. No report relating to the total amount of the city-district, ward, or village
received from the ken of Iwate. The seven isles of Idzu, and the three gun of Oshima,
Komage, in the ken of Kagoshima, are here omitted, owing to the absence of the necessary
d as to the gun of Mishima, in the ken of Yamaguchi, the educational expenses for the 14th
iji (1881) are here mentioned.
ber of those wards and villages where assemblies are not yet established, and the amount
cational expenses of such wards and villages, are placed together in this table.
lation of each fu and ken is corrected to the 31st of January of the 15th year of Meiji (1882).

of fu n.	Population.	No. of city-districts, wards, and villages.	Educational expenses.	Proportion per capita of population.	Total amount of the various city-district, ward, or village rates.	Percentage of educational expenses to the various expenses.
			*yen s. r.	s. r.	yen s. r.	
	1,159,338	370	121,245.716	105	206,094.196	58.8
	839,002	1,609	280,344.778	334	595,063.352	47.1
	1,585,695	3,740	404,631.051	255	1,238,268.770	32.7
	815,018	1,276	205,384.085	252	451,652.028	45.5
	1,428,085	3,370	303,313.929	212	929,903.554	32.6
	1,208,980	365	94,151.529	165	173,347.623	54.3
		592	105,653.080		258,570.364	40.9
	1,566,206	4,398	231,756.643	148	800,895.007	28.9
	135,576	212	38,315.539	283	62,912.849	60.9
	966,362	1,915	186,047.231	193	572,372.516	32.5
	1,102,602	1,555	39,561.481	036	187,202.204	21.1
	904,137	2,175	113,160.287	125	291,179.542	38.9
	612,333	1,219	199,029.944	325	421,669.377	47.2
	607,176	1,258	137,187.610	226	212,850.898	64.5
	866,918	1,822	216,343.639	250	524,572.901	41.2
	1,355,896	2,170	178,709.968	132	602,322.258	29.7
	975,319	2,015	192,536.779	197	639,839.584	30.1
i	411,287					
	635,001	1,685	223,094.917	351	460,183.389	48.5
	856,904	1,371	159,042.204	186	701,357.435	22.7
	1,040,276	886	431,036.490	414	940,441.533	45.8
	634,562					
a	835,457	1,779	186,191.443	223	494,501.988	37.6
	611,759	642	109,878.838	180		
	488,498	933	101,009.896	207	236,832.794	42.7
	683,204	1,476	152,322.435	223	466,391.438	32.7
	616,795	1,400	154,223.713	250	352,290.028	43.8
	581,294	1,982	104,805.207	180	363,857.078	28.8
	1,428,601	1,929	171,326.810	198	529,329.287	32.4
		2,737	110,933.163		566,045.783	19.6
	379,718	1,269	57,422.639	151	148,132.627	38.8
	674,580	998	114,590.331	170	273,096.875	41.9
	1,029,526	1,815	185,438.581	180	568,160.508	32.6
	1,245,073	1,048	139,912.640	112	388,782.466	36.0
i	891,803	704	126,054.561	141	244,260.515	51.6
a	608,802	1,645	77,169.309	127	325,433.016	23.7
a	651,249	648	104,374.219	160	284,909.663	36.6
	1,492,208	1,579	163,232.134	109	591,232.155	27.6
	559,542	974	83,380.794	149	302,405.732	27.6
	1,121,435	1,881	244,586.822	218	684,582.066	35.7
	746,396	1,209	99,321.233	133	418,466.458	23.7
o	972,469	1,420	109,537.797	113	304,141.610	36.0
a	1,271,176	524	73,740.494	071	161,643.904	45.6
		393	15,912.252		164,593.635	9.7
	351,273	494	15,258.906	043	103,366.695	14.8
	82,641	188	29,173.475	353	57,546.672	50.7
	11,196	56	1,533.421	137.	2,269.107	67.6
	37,041,368	63,726	6,591,878.123	178	18,303,061.480	36.0

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en=86.8 cents; the sen and the rin are respectively the 100th and the 1000th of a yen.

TABLE II.—PART 1.—*Showing school population and*

Name of fu or ken.	Population.			School population.			Children of school are receiving scribed course tion.	
	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.
Tokio	643,624	592,207	1,235,831	80,066	76,800	156,866	34,213	27,399
Kioto	423,795	424,556	848,351	69,672	65,972	135,644	45,634	28,153
Osaka	787,199	783,914	1,571,113	131,746	122,359	254,105	91,037	62,792
Kanagawa	416,805	406,663	823,468	64,144	60,988	125,132	48,426	22,546
Hiogo	737,827	706,252	1,444,079	122,296	111,204	233,500	78,266	39,452
Nagasaki	351,826	353,135	704,961	54,203	51,028	105,231	28,215	6,820
Niigata	769,069	791,130	1,560,199	130,915	127,090	258,005	85,248	25,744
Hakodate	71,470	67,015	138,485	11,288	10,512	21,800	6,274	2,140
Saitama	487,077	492,700	979,777	82,101	78,951	161,052	56,718	24,795
Chiba	563,135	554,301	1,117,436	85,492	75,929	161,421	56,763	18,927
Ibaraki	467,563	458,567	926,130	73,753	65,222	138,975	46,722	14,451
Gumma	315,329	316,172	631,501	50,641	46,412	97,053	40,912	25,676
Tochigi	312,307	308,883	621,190	55,370	50,269	105,639	38,982	16,889
Miye	439,930	439,257	879,187	72,900	69,813	142,713	55,381	35,957
Aichi	683,109	688,087	1,371,196	104,817	96,572	201,389	81,196	48,397
Shidzuoka	487,645	483,246	970,891	77,945	73,591	151,536	59,194	32,337
Yamanashi	208,135	209,214	417,349	34,586	31,377	65,963	26,902	11,474
Shiga	318,685	325,014	643,699	53,095	50,122	103,217	40,757	28,399
Gifu	446,211	429,965	876,176	73,634	69,019	142,653	58,180	37,265
Nagano	524,602	516,284	1,040,886	81,718	71,456	153,174	70,542	38,906
Miyagi	328,498	309,439	637,937	55,279	49,669	104,948	41,480	10,969
Fukushima	436,461	419,267	855,728	72,423	67,131	139,554	52,206	17,670
Iwate	319,241	300,455	619,696	46,492	39,933	86,425	35,803	13,681
Aomori	255,250	241,030	496,280	44,704	41,180	85,884	26,861	4,994
Yamagata	352,696	342,305	695,001	59,919	53,565	113,484	41,408	10,732
Akita	328,826	299,464	628,290	56,067	48,199	104,266	34,308	7,738
Fukui	291,954	293,800	585,754	48,995	45,535	94,530	36,791	16,704
Ishikawa	372,908	373,734	746,642	63,988	60,287	124,275	48,100	25,618
Toyama	355,625	343,421	699,046	69,335	63,866	133,201	48,780	22,771
Tottori	196,051	187,320	383,371	28,619	24,959	53,578	19,200	5,394
Shimane	348,202	331,948	680,150	52,408	49,488	101,896	38,947	18,060
Okayama	542,775	496,027	1,038,802	85,438	76,153	161,591	61,302	35,100
Hiroshima	640,371	611,485	1,251,856	103,352	85,293	188,645	75,060	40,392
Yamaguchi	461,507	442,236	903,743	72,738	70,301	143,039	47,373	20,210
Wakayama	307,738	302,001	609,739	53,690	50,749	104,439	34,057	13,659
Tokushima	328,120	319,615	647,735	53,352	49,688	103,040	37,033	13,149
Yehime	771,091	738,205	1,509,296	125,389	117,490	242,879	75,897	34,122
Kōchi	288,140	258,724	546,864	46,179	41,653	87,832	29,017	16,254
Fukuoka	572,597	565,489	1,138,086	95,129	91,362	186,491	57,031	17,965
Oita	380,273	372,414	752,687	60,555	56,629	117,184	43,410	21,106
Saga	264,639	252,761	517,400	42,347	37,548	79,895	27,969	9,127
Kumamoto	499,222	500,408	999,630	81,636	77,171	158,807	55,484	26,054
Miyazaki	196,660	185,771	382,431	30,284	28,583	58,867	18,004	5,968
Kagoshima	461,638	455,352	916,990	85,259	81,365	166,624	42,370	6,159
Okinawa	182,697	182,030	364,727	36,567	35,391	71,958	2,044	8
Sapporo	59,108	46,465	105,573	6,631	5,655	12,286	3,407	1,306
Nemuro	7,250	5,041	12,291	634	590	1,224	294	206
Total	19,024,689	18,522,961	37,547,650	3,087,781	2,864,219	5,952,000	2,073,648	963,622

dance for the sixteenth year of Meiji (1883).

who pre- ruc-	Children of school age who are not receiving the prescribed course of instruction.			Pupils under six years of age.			Pupils over fourteen years of age.			Per cent of population under instruction.
al.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	
612	45, 853	49, 401	95, 254	2, 435	1, 271	3, 706	18, 872	906	19, 778	6. 8
789	24, 038	37, 817	61, 855	1, 856	1, 069	2, 925	2, 585	1, 131	3, 716	9. 5
829	40, 709	59, 567	100, 276	4, 272	2, 823	7, 095	5, 481	1, 987	7, 468	10. 8
012	23, 718	38, 402	62, 120	1, 251	655	1, 906	1, 053	92	1, 145	8. 0
718	46, 020	71, 852	117, 872	4, 578	2, 733	7, 311	1, 635	232	1, 867	8. 7
035	25, 988	44, 208	70, 196	1, 030	298	1, 328	1, 838	208	2, 046	5. 4
992	45, 667	101, 346	147, 013	3, 607	1, 200	4, 807	3, 180	255	3, 435	7. 5
414	5, 014	8, 372	13, 386	91	31	122	374	37	411	6. 5
513	25, 383	54, 156	79, 539	1, 346	649	1, 995	2, 920	102	3, 022	8. 8
690	28, 729	57, 002	85, 731	1, 399	580	1, 979	2, 408	138	2, 546	7. 2
173	27, 031	50, 771	77, 802	1, 377	576	1, 953	3, 096	93	3, 189	7. 1
588	9, 729	20, 736	30, 465	1, 877	1, 078	2, 955	1, 892	312	2, 204	11. 3
871	16, 388	33, 380	49, 768	1, 810	858	2, 668	2, 294	274	2, 568	9. 8
338	17, 519	33, 856	51, 375	2, 122	1, 093	3, 215	2, 216	404	2, 620	11. 0
503	23, 621	48, 265	71, 886	2, 393	1, 246	3, 639	2, 453	327	2, 780	9. 9
531	18, 751	41, 254	60, 005	2, 146	1, 008	3, 154	1, 797	280	2, 077	10. 0
466	7, 594	19, 903	27, 497	1, 454	638	2, 092	836	184	1, 020	9 9
126	12, 338	21, 753	34, 091	1, 884	1, 193	3, 077	594	107	701	11. 3
445	15, 454	31, 754	47, 208	1, 740	1, 025	2, 765	2, 382	512	2, 894	11. 6
538	11, 176	32, 460	43, 636	3, 513	1, 404	4, 917	1, 959	250	2, 209	11. 2
469	13, 799	38, 680	52, 479	951	276	1, 227	2, 485	493	2, 978	8. 9
936	20, 157	49, 461	69, 618	1, 376	502	1, 878	2, 970	336	3, 306	8. 8
424	10, 689	26, 312	37, 001	1, 213	623	1, 836	2, 099	176	2, 275	8. 6
855	17, 843	36, 186	54, 029	537	120	657	1, 665	92	1, 757	6. 9
200	18, 451	42, 833	61, 284	939	263	1, 202	1, 567	144	1, 711	7. 9
041	21, 759	40, 466	62, 225	589	174	763	1, 004	80	1, 084	7. 0
495	12, 204	28, 831	41, 035	1, 845	728	2, 573	939	65	1, 004	9. 7
718	15, 888	34, 669	50, 557	3, 210	1, 280	4, 490	2, 152	413	2, 565	10. 8
551	20, 555	41, 095	61, 650	1, 626	701	2, 327	1, 430	463	1, 893	10. 8
594	9, 419	19, 565	28, 984	523	158	681	880	129	1, 009	6. 9
027	13, 461	31, 408	44, 869	1, 618	584	2, 202	1, 705	235	1, 940	9. 0
492	24, 046	41, 053	65, 099	3, 114	1, 878	4, 992	3, 933	783	4, 716	10. 2
452	28, 292	54, 901	83, 193	5, 839	3, 116	8, 955	3, 435	530	3, 965	10. 2
583	25, 365	50, 091	75, 456	1, 662	701	2, 363	1, 180	87	1, 267	7. 9
716	19, 633	37, 090	56, 723	1, 039	484	1, 523	1, 276	21	1, 297	8. 3
182	16, 319	36, 539	52, 858	1, 314	449	1, 763	2, 628	148	2, 776	8. 4
019	49, 492	83, 368	132, 860	2, 826	1, 375	4, 201	3, 807	340	4, 147	7. 8
271	17, 162	25, 399	42, 561	587	258	845	1, 286	146	1, 432	8. 7
996	38, 098	73, 397	111, 495	2, 070	753	2, 823	4, 928	468	5, 396	7. 3
516	17, 145	35, 523	52, 668	1, 438	589	2, 027	2, 872	229	3, 101	9. 2
096	14, 378	28, 421	42, 799	1, 298	555	1, 853	1, 367	141	1, 508	7. 8
538	26, 152	51, 117	77, 269	1, 008	395	1, 403	2, 508	173	2, 681	8 6
062	12, 190	22, 615	34, 805	444	122	566	775	85	860	6. 6
529	42, 889	75, 206	118, 095	873	104	977	4, 922	204	5, 126	6. 0
052	34, 523	35, 383	69, 906	20	1	21	1, 217	......	1, 217	. 9
773	3, 164	4, 349	7, 513	54	31	85	215	2	217	4. 8
500	340	384	724	8	7	15	25	1	26	4. 4
270	1, 014, 133	1, 900, 597	2, 914, 730	80, 202	37, 655	117, 851	115, 135	13, 815	128, 950	8. 8

TABLE II.—PART 2.—*Showing number of schools*

Name of fu or ken.	Elementary schools.			Number of public element				
				Teachers.			Assistant	
	Public.	Private.	Total.	Male.	Female.	Total.	Male.	Female.
Tōkiō	229	462	691	539	37	576	1	50
Kiōto	495	....	495	838	18	856	33	103
Ōsaka	1,023	9	1,032	874	3	877	262	....
Kanagawa	544	12	556	247	4	251	....	1
Hiōgo	960	....	960	1,058	5	1,063	4	....
Nagasaki	495	....	495	321	3	324	126	5
Niigata	1,126	1	1,127	1,068	17	1,085	....	....
Hakodate	136	9	145	201	8	209	2	13
Saitama	725	2	727	938	6	944	....	....
Chiba	951	8	959	811	14	825	....	....
Ibaraki	928	....	928	481	5	486	71	1
Gumba	596	2	598	853	4	857	146	1
Tochigi	529	7	536	438	5	443	....	....
Miye	716	....	716	432	....	432	....	....
Aichi	1,065	1	1,066	1,050	5	1,055	2	13
Shidzuoka	702	3	705	799	2	801	14	8
Yamanashi	303	....	303	357	6	363	15	....
Shiga	682	....	682	596	11	607	....	....
Gifu	695	....	695	680	7	687	28	9
Nagano	848	2	850	701	....	701	....	1
Miyagi	435	....	435	436	1	437	3	....
Fukushima	851	....	851	655	2	657	43	....
Iwate	743	4	747	482	2	484	1	1
Aomori	548	1	549	290	4	294	....	....
Yamagata	556	2	558	562	5	567	37	5
Akita	509	2	511	523	20	543	1	....
Fukui	578	....	578	341	8	349	169	1
Ishikawa	670	9	679	482	49	531	184	68
Toyama	439	....	439	181	15	196	85	9
Tottori	403	....	403	386	13	399	116	15
Shimane	697	4	701	253	5	258	....	....
Okayama	771	2	773	751	2	753	9	....
Hiroshima	975	4	979	753	1	754	100	5
Yamaguchi	875	2	877	383	....	383	9	....
Wakayama	747	1	748	668	2	670	....	4
Tokushima	512	....	512	328	1	329	....	....
Yehime	1,417	6	1,423	929	6	935	2	....
Kōchi	526	1	527	392	2	394	....	....
Fukuoka	772	....	772	1,215	....	1,215	3	....
Oita	542	....	542	299	....	299	1	....
Saga	336	....	336	209	1	210	89	....
Kumamoto	762	5	767	269	....	269	1	....
Miyazaki	360	1	361	15	....	15	4	....
Kagoshima	671	2	673	66	....	66	4	....
Okinawa	53	....	53	57	....	57	....	....
Sapporo	83	3	86	82	....	82	1	....
Nemuro	10	....	10	16	1	17	....	....
Total	29,589	567	30,156	24,305	300	24,605	1,566	312

nd instructors for the sixteenth year of Meiji (1883).

ry schools.				Number of private elementary schools.								
teach- ers.	Pupil teachers.			Teachers.			Assistant teachers.			Pupil teachers.		
Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.	Total.
51	237	33	270	126	24	150	......	1	1	510	183	693
135	975	182	1,157	......	......	......	......	......	......	......	......	......
262	1,460	53	1,513	11	1	12	......	......	......	5	......	5
1	1,777	63	1,840	......	......	......	......	......	......	16	......	16
4	2,249	110	2,359	......	......	......	......	......	......	......	......	......
131	997	32	1,029	......	......	......	......	......	......	......	......	......
......	3,478	60	3,538	......	......	......	......	......	......	1	......	1
15	23	7	30	11	......	11	3	......	3	1	......	1
......	1,619	38	1,657	2	1	3	......	......	......	2	......	2
......	1,139	34	1,173	8	1	9	......	......	......	3	3	6
72	830	18	848	......	......	......	......	......	......	......	......	......
147	1,237	32	1,269	6	......	6	......	......	......	9	4	13
......	1,297	54	1,351	5	......	5	......	......	......	19	6	25
......	2,263	101	2,364	......	......	......	......	......	......	......	......	......
15	1,664	129	1,793	1	......	1	......	......	......	2	......	2
22	3,014	92	3,106	......	......	......	......	......	......	3	1	4
15	914	8	922	......	......	......	......	......	......	......	......	......
......	1,380	164	1,544	......	......	......	......	......	......	......	......	......
37	2,012	388	2,400	......	......	......	......	......	......	......	......	......
1	4,565	205	4,770	2	......	2	......	......	......	9	......	9
3	1,852	84	1,936	......	......	......	......	......	......	......	......	......
43	1,116	36	1,152	......	......	......	......	......	......	......	......	......
2	771	5	776	1	1	2	......	......	......	5	3	8
......	628	49	677	......	......	......	......	......	......	1	......	1
42	1,330	47	1,377	2	......	2	......	......	......	1	......	1
1	1,266	54	1,320	1	......	1	......	......	......	1	......	1
170	877	34	911	......	......	......	......	......	......	......	......	......
252	987	301	1,288	8	2	10	......	......	......	19	14	33
94	988	155	1,143	......	......	......	......	......	......	......	......	......
131	63	......	63	......	......	......	......	......	......	......	......	
......	1,322	89	1,411	......	......	......	......	......	......	10	2	12
9	1,498	89	1,587	......	......	......	......	......	......	2	......	2
105	1,167	38	1,205	4	......	4	......	......	......	31	2	33
9	2,110	93	2,203	2	......	2	......	......	......	5	2	7
4	213	......	213	1	......	1	......	......	......	......	......	......
......	526	35	561	......	......	......	......	......	......	......	......	......
2	1,669	55	1,724	4	1	5	......	......	......	8	1	9
......	864	51	915	......	......	......	......	......	......	1	......	1
3	1,675	70	1,745	......	......	......	......	......	......	......	......	......
1	1,174	28	1,202	......	......	......	......	......	......	......	......	......
89	965	5	970	......	......	......	......	......	......	......	......	......
1	1,537	34	1,571	......	......	......	......	......	......	5	2	7
4	756	12	768	......	......	......	......	......	......	4	2	6
4	2,214	42	2,256	......	2	2	......	......	......	4	......	4
......	31	......	31	......	......	......	......	......	......	......	......	......
1	67	6	73	1	......	1	......	......	......	1	......	1
......	5	1	6	......	......	......	......	......	......	......	......	......
1,878	60,801	3,216	64,017	196	33	229	3	1	4	678	225	903

TABLE II.—PART 2.—*Showing number of schools and in*

Name of fu or ken.	Pupils of public elementary schools.			Pupils of private elementary schools.		
	Male.	Female.	Total.	Male.	Female.	Total.
Tokio	18, 534	11, 848	30, 382	18, 044	16, 992	35, 036
Kioto	47, 123	28, 409	75, 532	....	....	....
Osaka	95, 866	66, 043	161, 909	530	472	1, 002
Kanagawa	41, 722	22, 793	64, 515	540	382	922
Hiogo	82, 299	43, 142	125, 441	....	....	....
Nagasaki	29, 973	7, 271	37, 244	....	....	....
Niigata	90, 288	26, 957	117, 245	45	4	49
Hakodate	5, 954	1, 839	7, 793	596	342	938
Saitama	60, 098	25, 504	85, 602	107	41	148
Chiba	59, 234	19, 299	78, 533	458	220	678
Ibaraki	50, 019	15, 101	65, 120	....	....	....
Gumba	44, 112	27, 960	72, 072	241	374	615
Tochigi	41, 927	17, 522	59, 449	513	419	932
Miye	58, 004	36, 302	94, 306	....	....	....
Aichi	84, 235	49, 650	133, 885	54	14	68
Shidzuoka	61, 879	33, 295	95, 174	139	113	252
Yamanashi	28, 782	12, 211	40, 993	....	....	....
Shiga	42, 946	29, 601	72, 547	....	....	....
Gifu	61, 070	38, 966	100, 036	....	....	....
Nagano	75, 844	41, 990	117, 834	151	94	245
Miyagi	44, 481	11, 458	55, 939	....	....	....
Fukushima	57, 147	20, 159	77, 306	....	....	....
Iwate	39, 111	14, 653	53, 764	150	208	358
Aomori	28, 032	5, 138	33, 170	25	20	45
Yamagata	43, 301	11, 119	54, 420	40	14	54
Akita	35, 501	7, 890	43, 391	63	16	79
Fukui	40, 181	18, 734	58, 915	....	....	....
Ishikawa	51, 830	26, 007	77, 337	751	410	1, 161
Toyama	53, 164	25, 208	78, 372	....	....	....
Tottori	20, 638	6, 006	26, 644	....	....	....
Shimane	41, 292	19, 061	60, 353	257	101	358
Okayama	71, 537	43, 430	114, 967	16	2	18
Hiroshima	82, 879	43, 345	126, 224	372	201	573
Yamazuchi	49, 741	20, 898	79, 639	127	99	226
Wakayama	35, 102	13, 795	48, 897	27	16	43
Tokushima	40, 473	13, 370	53, 843	....	....	....
Yehime	81, 528	36, 402	117, 930	293	224	517
Kōchi	31, 470	16, 761	48, 231	21	7	28
Fukuoka	60, 056	18, 917	78, 973	....	....	....
Ōita	46, 261	21, 922	68, 183	....	....	....
Saga	29, 868	9, 823	39, 691	....	....	....
Kumamoto	57, 444	26, 563	84, 007	148	59	207
Miyazaki	19, 208	5, 944	25, 152	....	101	101
Kagoshima	46, 713	6, 380	53, 093	45	99	144
Okinawa	2, 673	9	2, 682	....	....	....
Sapporo	3, 157	1, 166	4, 323	81	30	111
Nemuro	327	214	541	....	....	....
Total	2, 192, 524	1, 000, 075	3, 192, 599	23, 834	21, 074	44, 908

rs for the sixteenth year of Meiji (1883)—(Continued).

Middle schools.									University.		
Number of schools.			Number of instructors.			Number of students.			Government.	Instructors.	Students.
Public.	Private	Total.	Government.	Public.	Private	Government.	Public.	Private			
			Male.	Male.	Male.	Male.	Male.	Male.		Male.	Male.
1		1		17			235		1	178	1, 650
1	1	2		14	3		157	30			
3		4	19	24		219	377				
1	1	2		5	3		81	12			
6		6		51			510				
7		7		52			498				
10		10		48			604				
10		10		43			604				
1		1		7			101				
2		2		11			131				
1		1		11			107				
1		1		8			64				
3		3		17			163				
2	1	3		21	8		247	34			
6		6		41			423				
1		1					95				
1		1		6			59				
1		1		13			143				
4		4		26			271				
1		1		13			158				
3		3		5			125				
1		1		14			115				
8		8		39			600				
5	1	6		26	10		292	189			
1		1		9			70				
2		2		8			161				
2		2		12			135				
1		1									
2		2		17			208				
3		3		9			192				
9		9		35			621				
2		2		17			174				
5		5		38			361				
1		1		12			162				
4		4		32			496				
9		9		59			685				
5		5		38			402				
19		19		149			2, 441				
6		6		29			385				
7		7		51			737				
2		2		9			178				
2		2		4			81				
3	2	5		12	9		236	350			
1		1		3			44				
166	6	178	19	1, 055	33	219	13, 929	615	1	178	1, 650

TABLE II.—PART 3.—*Showing number of training and miscella*

Name of fu or ken.	Number of normal schools.										
	Schools.			Instructors.				Students.			
				Government.		Public.		Government.		Public.	
	Government.	Public.	Total.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Tōkiō	2	1	3	36	10	7	......	163	101	47	......
Kiōto	......	2	2	......	......	12	......	......	......	112	109
Ōsaka	......	4	4	......	......	52	......	......	......	669	......
Kanagawa	......	1	1	......	......	9	......	......	......	91	......
Hiōgo	......	1	1	......	......	10	......	......	......	42	......
Nagasaki	......	1	1	......	......	9	......	......	......	122	......
Niigata	......	2	2	......	......	16	2	......	......	181	44
Hakodate	......	1	1	......	......	16	......	......	......	89	......
Saitama	......	1	1	......	......	9	......	......	......	103	......
Chiba	......	2	2	......	......	15	3	......	......	118	71
Ibaraki	......	1	1	......	......	10	......	......	......	86	......
Gumba	......	1	1	......	......	14	......	......	......	107	......
Tochigi	......	1	1	......	......	7	......	......	......	81	......
Miye	......	1	1	......	......	11	......	......	......	102	......
Aichi	......	1	1	......	......	10	......	......	......	93	......
Shidzuoka	......	2	2	......	......	8	......	......	......	101	......
Yamanashi	......	2	2	......	......	14	......	......	......	75	5
Shiga	......	2	2	......	......	20	5	......	......	103	12
Gifu	......	2	2	......	......	13	3	......	......	90	20
Nagano	......	1	1	......	......	12	......	......	......	106	......
Miyagi	......	1	1	......	......	14	......	......	......	98	......
Fukushima	......	2	2	......	......	16	......	......	......	130	......
Iwate	......	1	1	......	......	11	......	......	......	116	......
Aomori	......	9	9	......	......	25	2	......	......	221	42
Yamagata	......	1	1	......	......	17	......	......	......	101	......
Akita	......	2	2	......	......	14	5	......	......	128	81
Fukui	......	2	2	......	......	17	......	......	......	111	......
Ishikawa	......	2	2	......	......	23	2	......	......	187	75
Toyama	......	2	2	......	......	20	4	......	......	127	55
Tottori	......	1	1	......	......	9	......	......	......	58	......
Shimane	......	2	2	......	......	6	......	......	......	100	......
Okayama	......	1	1	......	......	7	......	......	......	93	......
Hiroshima	......	4	4	......	......	15	3	......	......	203	21
Yamaguchi	......	1	1	......	......	8	......	......	......	87	......
Wakayama	......	1	1	......	......	11	......	......	......	200	......
Tokushima	......	1	1	......	......	13	......	......	......	117	......
Yehime	......	3	3	......	......	32	......	......	......	140	......
Kōchi	......	2	2	......	......	13	4	......	......	135	77
Fukuoka	......	1	1	......	......	9	......	......	......	98	......
Ōita	......	1	1	......	......	9	......	......	......	97	......
Saga	......	......	......	......	......	......	......	......	......	......	......
Kumamoto	......	1	1	......	......	8	......	......	......	118	......
Miyazaki	......	1	1	......	......	......	......	......	......	......	......
Kagoshima	......	4	4	......	......	16	4	......	......	311	53
Okinawa	......	1	1	......	......	11	......	......	......	97	......
Sapporo	......	1	1	......	......	7	......	......	......	49	......
Nemuro	......	......	......	......	......	......	......	......	......	......	......
Total	2	78	80	36	10	605	37	163	101	5,640	665

neous schools and instructors for the sixteenth year of Meiji (1883).

Number of professional schools.

Schools.				Instructors.			Students.				
				Government.	Public.	Private.	Government.	Public.		Private.	
Government.	Public.	Private.	Total.	Male.	Male.	Male.	Male.	Male.	Female.	Male.	Female.
2	....	27	29	47	....	168	382	....	....	3,090	40
....	2	1	3	....	11	2	....	182	2	16	....
....	1	2	3	....	6	7	....	158	....	96	2
....	1	....	1	....	5	....	....	65	....	....	....
....	2	....	2	....	18	....	....	240	....	....	....
....	2	....	2	....	20	....	....	218	....	....	....
....	3	1	4	....	21	1	....	144	....	16	....
....	2	....	2	....	7	....	....	40	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	1	....	1	....	8	....	....	114	....	....	....
....	1	....	1	....	7	....	....	57	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	1	1	2	....	9	1	....	80	....	4	....
....	1	1	2	....	11	5	....	111	....	58	....
....	....	....	....	....	....	....	....	....	....	....	....
....	1	....	1	....	4	....	....	20	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	2	....	2	....	18	....	....	85	....	....	....
....	1	....	1	....	5	....	....	68	....	....	....
....	1	....	1	....	9	....	....	87	....	....	....
....	2	....	2	....	11	....	....	71	....	....	....
....	1	....	1	....	8	....	....	48	....	....	....
....	1	1	2	....	5	8	....	73	....	102	....
....	....	....	....	....	....	....	....	....	....	....	....
....	1	....	1	....	9	....	....	93	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	3	....	3	....	42	....	....	446	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	1	....	1	....	1	....	....	19	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	1	....	1	....	11	....	....	226	....	....	....
....	2	....	2	....	15	....	....	96	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	1	....	1	....	8	....	....	89	10	....	....
....	1	....	1	....	12	....	....	55	....	....	....
....	1	....	1	....	6	....	....	84	....	....	....
....	1	....	1	....	8	....	....	119	....	....	....
....	2	1	3	....	17	9	....	218	....	410	....
....	1	....	1	....	6	....	....	77	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	1	....	1	....	7	....	....	178	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	1	....	1	....	5	....	....	102	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
2	43	35	80	47	330	201	382	3,663	12	3,792	42

TABLE II.—PART 3.—*Showing number of training and miscellaneous*

Name of fu or ken.	Number of higher female schools.									Gymnastic institution.		
	Schools.			Instructors.				Students.		Government.	Instructors.	Students.
				Government.		Public.						
	Government.	Public.	Total.	Male.	Female.	Male.	Female.	Government.	Public.		Male.	Male.
Tōkiō	1		1					101		1	6	15
Kioto		1	1			11	13		32			
Osaka												
Kanagawa												
Hiōgo												
Nagasaki												
Niigata												
Hakodate												
Saitama												
Chiba												
Ibaraki												
Gumba		1	1			4	4		46			
Tochigi		1	1				2		65			
Miye												
Aichi												
Shidzuoka												
Yamanashi		1	1			1	9		30			
Shiga												
Gifu		1	1			1	3		53			
Nagano												
Miyagi												
Fukushima												
Iwate												
Aomori												
Yamagata												
Akita												
Fukui												
Ishikawa												
Toyama												
Tottori												
Shimane												
Okayama												
Hiroshima												
Yamaguchi												
Wakayama												
Tokushima		1	1			7	6		123			
Yehime												
Kōchi												
Fukuoka												
Ōita												
Saga												
Kumamoto												
Miyazaki												
Kagoshima												
Okinawa												
Sapporo												
Nemuro												
Total	1	6	7			24	37	101	349	1	6	15

schools and instructors for the sixteenth year of Meiji (1883)—(Continued).

School of music.					Number of miscellaneous schools.										
Government.	Instructors.		Students.		Public.	Private.	Total.	Instructors.				Students.			
								Public.		Private.		Public.		Private.	
	Male.	Female.	Male.	Female.				Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1	6	3	11	......	6	371	377	12	......	774	51	256	......	18,159	1,681
......	......	......	......	......	12	110	122	17	18	69	54	166	510	1,691	969
......	......	......	......	......	3	194	197	7	4	143	79	299	44	3,472	2,059
......	......	......	......	......	......	22	22	......	......	39	4	......	......	775	512
......	......	......	......	......	......	26	26	......	......	26	3	......	......	818	523
......	......	......	......	......	1	7	8	......	......	7	......	......	29	400	26
......	......	......	......	......	1	20	21	......	1	32	......	......	22	851	97
......	......	......	......	......	......	3	3	......	......	3	......	......	......	86	1
......	......	......	......	......	......	8	8	......	......	9	......	......	......	176	......
......	......	......	......	......	......	16	16	......	......	29	......	......	......	528	10
......	......	......	......	......	......	30	30	......	......	33	......	......	......	905	17
......	......	......	......	......	......	18	18	......	......	21	1	......	......	609	106
......	......	......	......	......	......	13	13	......	......	26	......	......	......	505	9
......	......	......	......	......	......	13	13	......	......	36	1	......	......	675	126
......	......	......	......	......	1	44	45	2	......	57	6	43	......	1,485	500
......	......	......	......	......	1	23	24	2	2	26	5	......	135	595	260
......	......	......	......	......	1	12	13	1	......	16	1	68	......	285	97
......	......	......	......	......	......	15	15	......	......	12	3	......	......	233	73
......	......	......	......	......	3	19	22	6	......	21	......	76	......	593	27
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	6	6	......	......	6	8	......	......	100	292
......	......	......	......	......	......	2	2	......	......	6	......	......	......	364	......
......	......	......	......	......	1	6	7	1	......	6	1	13	......	149	40
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	4	4	......	......	7	......	......	......	117	......
......	......	......	......	......	......	3	3	......	......	3	......	......	......	61	......
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	4	4	......	......	4	2	......	......	32	......
......	......	......	......	......	......	9	9	......	......	14	2	......	......	593	157
......	......	......	......	......	......	3	3	......	......	3	......	......	......	155	......
......	......	......	......	......	......	8	8	......	......	12	......	......	......	567	83
......	......	......	......	......	......	46	46	......	......	41	10	......	......	1,692	720
......	......	......	......	......	1	23	24	1	......	27	2	49	......	990	79
......	......	......	......	......	1	22	23	3	......	35	......	36	......	1,109	27
......	......	......	......	......	......	29	29	......	......	46	1	......	......	1,199	66
......	......	......	......	......	......	19	19	......	......	17	......	......	......	570	31
......	......	......	......	......	3	18	21	13	......	37	1	83	218	1,604	66
......	......	......	......	......	......	4	4	......	......	25	......	......	......	280	......
......	......	......	......	......	1	16	17	1	......	21	4	......	28	810	237
......	......	......	......	......	......	15	15	......	......	27	......	......	......	900	2
......	......	......	......	......	......	3	3	......	......	6	......	......	......	110	5
......	......	......	......	......	1	15	16	2	......	29	......	25	......	1,238	1
......	......	......	......	......	1	1	2	1	......	6	......	9	......	30	......
......	......	......	......	......	1	9	10	8	......	23	......	204	......	1,113	38
......	......	......	......	......	9	......	9	27	......	......	......	467	......	......	......
......	......	......	......	......	......	1	1	......	......	3	......	......	......	97	......
......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
1	6	3	11	......	48	1,230	1,278	104	25	1,783	239	1,794	986	46,730	8,937

TABLE III.—*Showing for each fu or ken the value of property of public*

Name of fu or ken.	Value of school-houses.	Value of school sites.	Value of grounds attached to schools.
	yen s. r.	*yen s. r.*	*yen s. r.*
Tōkiō	157,728.010	26,092.455	2,948 061
Kiōto	661,341.282	83,863.896	3,403.931
Ōsaka	512,489.257	48,678.186	4,352.566
Kanagawa	282,746.925	11,172.921	1,907.062
Hiōgo	356,176.227	27,390.575	2,247.866
Nagasaki	114,644.206	13,796.464	4,896.059
Niigata	383,905.569	26,782.463	4,350.867
Hakodate	62,490.437	13,935.314	64,803.312
Saitama	147,890.918	15,878.486	2,247.007
Chiba	144,041.246	7,487.725	18,418.365
Ibaraki	141,083.590	9,540.755	31,006.381
Gumba	205,674.287	11,300.770	9,049.123
Tochigi	134,220.158	7,810.668	7,934.347
Miye	292,511.969	11,490 949	1,485.268
Aichi	873,665.431	22,924.943	6,839.954
Shidzuoka	349,724.983	19,714.509	8,979.210
Yamanashi	235,987.517	13,728.969	6,283 245
Shiga	453,572.929	25,758.758	1,356.938
Gifu	331,751.709	14,332.984	1,560 214
Nagano	519,280.414	27,089.527	18,787.553
Miyagi	177,115.543	13,697 098	13,902.453
Fukushima	206,247.402	16,979.966	13,357.067
Iwate	95,141.763	1,484.070	254.299
Aomori	100,304.000	10,808.002	6,236 457
Yamagata	239,975.364	11,773 208	1,749.006
Akita	129,686.617	2,385.618	210.834
Fukui	185,051.515	8,491.918	532.192
Ishikawa	159,339.400	10,022.385	1,538.945
Toyama	112,842.752	1,515.602	41.410
Tottori	39,414.888	3,079.493	1,171.503
Shimane	67,419.963	8,999.799	720 282
Okayama	132,119.737	12,745.400	3,771.447
Hiroshima	121,675.851	16,072.668	2,003.008
Yamaguchi	146,688.287	1,108.177	678.052
Wakayama	90,866.601	9,811.784	2,961.510
Tokushima	117,524.247	7,176.826	2,579 307
Yehime	171,295.054	12,993.737	7,936.529
Kōchi	112,640.577	12,167.126	17,276.136
Fukuoka	229,446.383	20,967.374	7,749 342
Ōita	93,138.901	10,963.503	1,630.020
Saga	106,462.464	18,155.019	2,727.942
Kumamoto	141,691.472	24,099.266	2,251.603
Miyazaki	47,418.845	7,309.186	1,722.461
Kagoshima	206,380.046	19,988.265	26,576 383
Okinawa	16,991.745	13,094.325	4,241.262
Sapporo	52,883.528	9,200.966	6,872.783
Nemuro	5,995.000	4,979.523	3,937.287
Total	9,166,684.514	678,441.011	337,627.880

schools, kindergärten, &c., for the sixteenth year of Meiji (1883).

Value of school books.	Value of school apparatus.	Value of school furniture.	School fund.	Total.
yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	*yen s. r.*
11,541.485	14,728.235	15,737.955	34,433.463	263,209.664
51,032.885	60,421.321	44,466.843	428,695.504	1,283,225.202
53,351.786	58,487.493	47,591.694	180,276.379	905,227.811
36,285.127	36,899.095	23,227.287	554,264.159	946,503.176
43,626.021	29,467.248	33,220.569	39,789.122	531,917.623
31,716.276	24,471.223	6,397.936	86,031.237	281,953.401
101,954.670	77,693.768	50,054.841	1,516,758.740	2,161,500.918
15,177.509	5,643.295	14,764.714	12,269.611	189,084.192
49,486.270	51,069.872	19,413.897	136,146.374	422,133.424
47,631.278	26,226.792	39,240.476	1,071,936.153	1,354,981.970
38,297.115	27,386.756	24,344.213	257,266.944	528,875.754
34,778.042	35,184.690	28,472.665	591,973.071	910,432.648
28,300.284	29,361.767	11,988.126	104,698.383	323,813.733
31,846.103	18,906.023	34,284.645	110,031.698	500,056.655
58,965.341	40,125.633	37,255.011	211,899.156	751,675.469
53,706.390	30,898.660	46,050.643	489,193.830	998,268.225
22,344.162	18,440.122	15,196.871	326,984.686	638,965.561
51,912.154	40,841.010	27,587.719	289,420.109	890,449.617
41,696.225	46,782.535	30,407.834	68,606.515	535,137.516
93,479.408	70,981.639	64,009.390	199,640.470	993,268.401
70,780.950	25,624.798	21,138.399	9,264.250	331,603.411
7,807.746	24,186.289	40,429.771	131,278.268	439,786.504
37,511.789	11,353.278	21,538.442	205,771.404	363,055.040
18,747.298	16,588.867	7,850.970	20,394.078	180,929.727
26,834.391	18,749.049	25,582.248	47,562.673	369,225.936
30,647.401	23,683.193	12,274.324	41,309.467	240,197.464
33,473.774	29,964.410	17,284.989	22,881.667	297,670.465
26,201.829	32,605.391	11,547.568	41,160.679	282,416.197
21,485.151	35,220.902	10,956.972	35,160.974	217,223.703
15,838.259	5,233.094	9,254.346	44,269.617	118,261.194
24,329.277	8,464.746	19,783.751	196,946.345	326,664.113
34,890.737	16,596.493	29,247.520	61,196.778	290,568.112
39,785.517	22,470.143	19,259.008	38,469.076	259,735.671
31,600.238	15,598.824	27,955.998	168,217.399	391,846.975
21,184.146	18,816.180	8,098.280	73,772.423	225,010.924
21,088.158	9,751.928	11,812.868	15,083.771	185,017.105
38,464.991	24,382.502	22,237.190	355,880.469	633,190.472
26,856.396	10,963.509	9,723.845	98,198.807	287,326.396
46,874.976	19,469.033	40,541.069	49,830.911	414,879.088
23,543.432	7,974.166	17,718.014	104,419.633	259,382.660
27,325.602	22,036.574	13,648.067	60,443.498	250,794.156
23,083.512	23,859.685	9,870.846	179,468.865	404,324.949
9,398.601	3,310.597	5,459.432	85,468.653	160,087.675
33,524.085	21,557.900	12,383.416	742,186.118	1,063,596.213
5,337.064	2,204.261	1,198.384	2,037.680	45,704.721
4,043.795	5,126.938	4,718.051	17,936.149	100,782.240
1,172.146	647.814	842.814	788.814	18,412.548
1,584,459.782	1,200,397.731	1,046,058.736	9,559,704.575	28,578,874.209

TABLE IV.—*Showing the items of the income of the public schools,*

Name of fu or ken.	Balance from preceding year.	District rates.	Interest.
	yen s. r.	*yen s. r.*	*yen s. r.*
Tōkiō	8, 131. 506	64, 362. 538	3, 065. 720
Kiōto	22, 758. 057	276, 000. 341	38, 667. 977
Osaka	136, 598. 582	439, 717. 984	19, 194. 095
Kanagawa	9, 724. 945	119, 192. 600	59, 803. 044
Hiōgo	43, 384. 898	341, 879. 873	4, 139. 611
Nagasaki	13, 972. 453	103, 125. 908	10, 143. 034
Niigata	19, 390. 848	280, 123. 575	152, 601. 990
Hakodate	20, 389. 598	36, 934. 016	1, 382, 902
Saitama	26, 999. 682	197, 877. 018	16, 291. 281
Chiba	16, 326. 644	68, 199. 799	116, 573. 699
Ibaraki	24, 563. 465	94, 492. 511	34, 360. 960
Gumba	3, 671. 868	213, 768. 672	75, 376. 435
Tochigi	2, 171. 520	88, 459. 598	16, 422. 469
Miye	84, 819. 216	203, 559. 007	11, 077. 388
Aichi	25, 610. 782	223, 607. 867	21, 238. 141
Shidzuoka	13, 800. 309	212, 865. 578	52, 392. 405
Yamanashi	2, 909. 957	84, 735. 948	37, 561. 521
Shiga	6, 777. 006	217, 173. 586	23, 820. 055
Gifu	6, 286. 607	175, 308. 925	7, 184. 488
Nagano	25, 957. 003	469, 655. 511	26, 175. 703
Miyagi	29, 210. 144	214, 385. 287	1, 044. 439
Fukushima	47, 251. 793	198, 829. 132	12, 854. 180
Iwate	22, 951. 606	90, 296. 576	34, 129. 942
Aomori	11, 853. 821	109, 246. 351	1, 667. 556
Yamagata	3, 301. 975	145, 208. 109	4, 654. 479
Akita	7, 954. 440	168, 768. 659	3, 100. 739
Fukui	5, 942. 725	108, 824. 997	1, 352. 205
Ishikawa	15, 393. 994	160, 506. 802	4, 931. 439
Toyama	25, 843. 098	97, 262. 439	4, 580. 079
Tottori	5, 277. 655	63, 108. 603	3, 320. 925
Shimane	7, 649. 399	112, 180. 876	6, 045. 420
Okayama	29, 236. 423	183, 959. 001	6, 412. 305
Hiroshima	17, 850. 852	160, 468. 713	3, 443. 044
Yamaguchi	96, 714. 677	139, 289. 082	12, 970. 184
Wakayama	1, 906. 564	82, 038. 510	14, 662. 275
Tokushima	7, 583. 203	115, 456. 777	1, 336. 900
Yehime	20, 630. 515	204, 259. 150	52, 270. 701
Kochi	10, 222. 049	57, 820. 230	19, 482. 689
Fukuoka	16, 348. 536	245, 550. 349	4, 703. 044
Oita	9, 722. 354	96, 038. 320	8, 803. 802
Saga	6, 121. 004	93, 364. 098	6, 274. 610
Kumamoto	24, 687. 999	99, 457. 144	23, 293. 220
Miyazaki	9, 503. 725	39, 966. 001	15, 700. 509
Kagoshima	59, 590. 060	56, 057. 869	111, 925. 501
Okinawa	8, 148. 493	12, 127. 727	156. 306
Sapporo	6, 646. 183	22, 175. 902	3, 057. 892
Nemuro	783. 388	1, 612. 910	62. 599
Total	971, 570. 466	6, 988, 249. 854	1, 089, 759. 202

kindergärten, &c., for the sixteenth year of Meiji (1883).

Voluntary contributions.	Tuition fees, &c.	Local taxes.	Miscellaneous.	Total.
yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	*yen s. r.*
5,668.914	54,435.379	8,539.149	7,288.797	151,492.008
34,289.112	4,614.114	21,387.809	18,786.927	416,504.837
10,576.243	7,212.546	36,742.952	29,975.132	680,017.434
2,854.940	23,852.007	20,524.535	3,637.862	239,679.933
16,870.281	6,592.553	80,936.309	17,659.210	511,462.230
4,085.158	4,589.759	41,505.752	881.270	178.303.329
103,849.122	11,283.767	60,502.121	22,089.377	649,840.800
2,645.110	8,455.651	30,734.261	11,909.870	112,401.408
5,255.907	20,943.140	84,461.405	2,258.962	354,087.345
16,973.986	31,137.414	43,953.299	10,605.915	303,770.756
8,209.306	29,377.580	41,618.489	4,045.993	236,668.304
5,165.347	30,190.836	28,200.678	3,466,894	359,840.230
9,579 135	14,234.383	32,914.082	40,585.616	204,366.798
20,445.129	22,538.652	56,610.295	5,530.265	354,579.952
59,088.501	11,499.917	26,166.523	10,627.345	377,839.026
40,095.457	16,245.842	83,442.705	6,254.102	374,596.393
15,629.346	3,052.890	16,310.688	3,691.208	163,891.558
5,890.942	2,874.655	14,227.130	10,939.307	281,202.681
28,186.132	14,861.873	57,637.000	8,060.546	297,475.571
23,969.982	16,107.625	30,557.225	7,376.936	599,799.935
4,582.404	4,367.182	29,733.560	903.367	284,226.383
6,485.632	3,023.075	36,103.099	2,944.688	307,461.599
19,107.793	5,499.313	36,117.801	7,580.135	215,742.466
1,290.106	7,619.207	25,257.666	4,603.432	161,538.139
14,756.252	9,276.248	31,557.082	2,458.440	211,212.585
8,235.165	14,700.056	31,237.473	4,611.918	233,608.450
4,782.140	1,265.171	34,201.829	1,223.918	157,091.985
8,984.939	6,278.557	70,188.046	1,436.470	262,720.247
2,105.089	1,012.465	34,651.705	838.414	166,293.289
741.417	3,193.769	8,780.952	321.809	84,745.130
2,044.498	4,389.656	7,785.217	10,378.152	150,422.718
9,629.904	3,749.431	43,986.962	7,728.497	284,702.523
18,428.329	2,005.913	33,247.038	3,285.211	238,229.100
22,365.238	13,685.726	8,696.700	8,962.617	297,684.174
4,189.784	12,862.770	32,933.016	5,517.562	154,110.481
6,922.333	4,233.358	24,878.799	2,136.848	162,548.218
20,165.512	13,039.591	23,853.226	8,111.837	342,330.532
2,642.122	22,096.834	24,988.440	9,878.537	146,630.901
7,935.415	10,323.014	67,650,879	8,222.014	360,733.251
1,668.148	9,002.065	21,443.239	7,016.689	153,694.617
6,047.600	5,134 728	15,117.315	440.971	132,500.326
2,718.873	21,615.428	53,986.786	4,805.263	230,564.713
937.300	975.837	....	2,214.602	69,297.974
2,767.263	4,242.847	13,895.989	26,658.536	275,138.065
438.613	....	9 880.946	582.062	31,284.147
1,936.430	2,447.291	13,596,741	721.675	50,582.114
192.000	538,625	3,467.569	632.548	7,289.639
585,897.299	520,678.740	1,504,210.482	854,837.746	12,015,203.789

TABLE V.—*Showing the items of the expenditure for the public schools*

Name of fu or ken.	Salary of directors.	Salary of teachers, conductors, &c.	Salary of assistant teachers.	Salary of pupil-teachers.
	yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*
Tōkiō	....	69, 040. 000	3, 465. 369	14, 036. 241
Kiōto	7, 421. 080	113, 644. 290	8, 783. 182	59, 830. 316
Ōsaka	4, 428. 000	122, 992. 123	21, 218. 808	129, 080. 737
Kanagawa	480. 000	35, 085. 159	24. 000	109, 040. 836
Hiōgo	6, 395. 000	123, 318. 807	328. 260	99, 617. 345
Nagasaki	22. 063	49, 888. 554	5, 832. 002	42, 311. 972
Niigata	6, 855. 100	129, 118. 300	72. 800	143, 681. 515
Hakodate	....	23, 031. 794	8, 313. 963	1, 349. 473
Saitama	24, 109. 551	92, 868. 899	....	79, 322. 738
Chiba	2, 820. 000	99, 662. 109	....	56, 297. 457
Ibaraki	3, 253. 000	51, 088. 465	5, 631. 500	47, 414. 750
Gumba	7, 434. 000	99, 391. 323	16, 896. 727	74, 860. 751
Tochigi	562. 500	58, 857. 285	....	53, 715. 352
Miye	5, 600. 918	60, 044. 555	....	112, 506. 031
Aichi	3, 308. 500	118, 561. 488	314. 000	64, 335. 563
Shidzuoka	9, 437. 002	87, 050. 366	2, 127. 970	97, 430. 634
Yamanashi	3, 280. 000	42, 809. 745	1, 057. 500	37, 069. 166
Shiga	3, 385. 000	63, 766. 309	....	82, 117. 434
Gifu	1, 905. 000	81, 864. 889	2, 435. 075	74, 006. 928
Nagano	1, 800. 000	112, 832. 447	84. 000	188, 449. 342
Miyagi	20, 928. 850	46, 083. 197	324. 000	90, 190. 761
Fukushima	1, 482. 000	80, 207. 519	3, 368. 769	44, 508. 732
Iwate	1, 306. 000	54, 982. 983	157. 000	33, 642. 752
Aomori	1, 990. 000	88, 517. 407	....	38, 193. 172
Yamagata	600. 000	48, 993. 735	2, 281. 500	45, 773. 000
Akita	3, 829. 000	66, 383. 949	84. 000	43, 898. 948
Fukui	3, 575. 100	83, 766. 186	11, 004. 512	37, 446. 117
Ishikawa	4, 015. 468	54, 752. 339	23, 276. 536	66, 908. 035
Toyama	912. 000	24, 569. 404	8, 348. 970	55, 749. 596
Tottori	3, 437. 726	29, 078. 161	6, 404. 850	7, 801. 352
Shimane	....	24, 487. 755	....	56, 842. 870
Okayama	3, 108. 999	83, 694. 216	534. 740	59, 774. 747
Hiroshima	4, 945. 500	71, 813. 171	5, 299. 299	34, 719. 631
Yamaguchi	938. 000	35, 999. 865	486. 000	59, 065. 164
Wakayama	2, 010. 000	66, 866. 553	129. 508	10, 652. 274
Tokushima	3, 032. 916	42, 807. 892	35. 000	32, 757. 809
Yehime	3, 629. 650	85, 968. 511	102. 800	82, 241. 537
Kōchi	2, 146. 000	39, 777. 727	....	41, 616. 805
Fukuoka	7, 286. 000	133, 846. 391	223. 000	77, 490. 271
Ōita	975. 000	35, 013. 598	37. 900	53, 961. 211
Saga	3, 020. 000	20, 232. 392	6, 791. 690	42, 480. 298
Kumamoto	688. 000	36, 729. 020	36. 000	87, 693. 149
Miyazaki	....	2, 526. 000	228. 000	35, 709. 066
Kagoshima	1, 517. 500	21, 488. 252	404. 500	102, 861. 309
Okinawa	....	8, 382. 042	....	778. 816
Sapporo	516. 000	11, 796. 739	54. 000	2, 723. 836
Nemuro	240. 000	2, 627. 795	....	341. 256
Total	177, 682. 423	2, 837, 809. 766	146, 292. 725	2, 811, 376. 234

kindergärten, &c., for the sixteenth year of Meiji (1883).

Salary of school committee.	Various other salaries.	Expenses of pupils.	Travelling expenses of teachers, &c.	Travelling expenses of school committee.	Expenses for rent of buildings and grounds.
yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	*yen s. r.*	*yen s. r.*
1,241.867	12,145.568	1,408.220	44.462	45.125	3,589.823
16,809.234	26,673.830	1,385.685	2,796.421	2,055.576	1,381.194
22,218.675	52,170.327	15,174.150	967.690	2,066.349	5,922.035
11,571.517	10,405.134	2,962.599	383.889	778.057	3,380.992
28,510.197	29,738.854	6,495.277	3,656.646	2,275.663	6,370.886
10,002.089	8,831.572	4,358.104	958.975	469.699	1,145.768
9,088.749	40,386.938	11,105.746	1,635.128	2,006.450	6,714.762
1,177.968	4,496.292	4,103.105	1,861.478	22.500	217.607
12,171.780	13,080.892	4,045.605	2,912.013	2,803.197	5,527.123
12,879.954	12,003.163	4,943.065	1,469.130	464.735	5,611.456
8,602.774	11,255.634	3,368.782	1,497.220	816.696	2,360.778
14,907.618	14,723.315	6,263.319	1,886.717	1,194.384	3,421.538
3,168.199	12,861.265	2,881.833	1,687.056	987.598	1,995.478
15,626.671	9,182.162	3,964.877	1,528.533	1,877.104	3,217.719
11,764.949	11,962.809	2,306.148	1,274.668	1,250.028	6,387.083
16,974.334	10,451.369	44.000	1,569.789	1,054.355	2,698.140
11,352.028	7,941.297	3,169.272	1,423.058	599.176	1,184.890
13,283.240	11,366.335	4,778.075	1,196.990	1,320.815	2,096.202
7,153.649	19,987.284	1,535.500	1,300.910	1,436.001	3,340.579
22,885.782	32,120.174	6,810.000	2,357.965	2,037.129	6,120.629
6,990.870	9,473.268	3,576.267	1,962.026	608.445	1,513.555
12,577.782	11,553.254	8,031.514	3,209.659	1,797.307	2,574.769
9,384.017	7,843.347	2,018.140	1,887.399	1,038.601	2,033.366
7,302.370	6,359.849	7,752.082	1,441.902	613.379	1,497.218
6,237.254	12,166.881	12,285.855	1,044.709	880.899	1,941.789
14,420.604	8,407.032	5,667.551	1,557.207	874.732	3,848.692
5,847.555	7,113.395	2,489.895	950.036	486.704	2,250.737
10,732.852	12,009.032	11,022.563	1,888.079	1,062.497	3,525.294
8,425.123	6,006.673	....	477.446	540.301	5,682.716
4,057.427	4,005.104	18.050	743.438	238.262	1,040.443
8,062.892	5,062.763	840.253	581.033	538.541	3,065.431
10,620.583	7,828.726	2,473.073	2,513.176	961.810	3,601.511
12,737.405	7,843.104	4,770.864	2,134.285	1,996.996	5,095.946
9,382.604	5,703.369	8,103.550	3,493.481	1,070.500	2,025.216
6,576.113	7,831.990	6,800.381	756.844	490.653	1,999.852
14,170.197	6,333.070	2,786.847	1,211.305	672.372	2,424.031
23,249.323	7,307.685	8,067.093	2,865.916	907.773	3,701.986
7,427.188	5,501.497	2,818.111	474.090	490.521	874.749
20,536.093	18,719.480	2,006.880	3,362.785	1,091.012	2,769.586
7,417.211	5,310.895	3,238.575	900.565	414.191	1,546.021
7,624.998	6,646.076	....	585.960	366.644	609.080
8,381.579	14,187.334	2,301.730	486.100	720.421	1,109.952
4,903.393	8,962.173	....	35.600	123.055	74.789
10,224.106	31,059.706	1,168.170	1,235.843	467.934	703.415
213.884	1,960.908	1,516.410	532.800	13.793	4.538
592.754	3,147.243	1,973.804	445.370	58.500	207.100
376.000	687.049	....	215.300	4.737	30.000
489,882.911	571,244.117	182,830.619	68,401.592	44,057.407	128,163.309

TABLE V.—*Showing the items of the expenditure for the public schools,*

Name of fu or ken.	Expenses for books.	Expenses for apparatus.	Expenses for appliances.	Expenses for fuel, charcoal, and oil.
	yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*
Tōkiō	1, 485. 689	3, 434. 090	3, 087. 831	6, 401. 373
Kioto	7, 930. 421	11, 736. 780	5, 716. 998	18, 319. 053
Osaka	9, 270. 845	10, 326. 584	9, 182. 560	17, 418. 860
Kanagawa	4, 527. 565	5, 003. 893	3, 443. 582	9, 838. 780
Hiōgo	9, 901. 837	7, 181. 032	8, 288. 451	13, 575. 468
Nagasaki	4, 479. 534	4, 568, 768	1, 626. 545	4, 185. 241
Niigata	15, 630. 501	13, 473. 067	9, 441. 870	28, 968. 603
Hakodate	7, 431. 120	777. 238	2, 633. 537	4, 154. 935
Saitama	10, 621. 670	11, 540. 201	6, 454. 842	11, 655. 096
Chiba	5, 573. 046	3, 855. 846	5, 151. 146	9, 442. 218
Ibaraki	5, 110. 816	3, 798. 255	3, 620. 872	7, 572. 470
Gumba	4, 482. 258	4, 283. 608	3, 673. 598	10, 117. 894
Tochigi	8, 918. 981	3, 351. 098	2, 520. 807	6, 071. 340
Miye	7, 726. 471	4, 723. 306	6, 665, 471	4, 482. 746
Aichi	9, 044. 731	5, 862. 673	4, 811. 514	8, 083. 569
Shidzuoka	6, 749. 102	5, 244. 288	5, 946. 815	7, 640. 171
Yamanashi	2, 718. 806	2, 202. 407	2, 788. 818	5, 643. 769
Shiga	10, 553. 870	6, 467. 533	4, 810. 601	8, 961, 286
Gifu	6, 576. 953	7, 020. 796	4, 770. 770	9, 355, 113
Nagano	12, 002. 765	13, 097. 865	9, 714. 990	31, 554. 881
Miyagi	8, 762. 649	6, 085. 836	4, 515. 813	6, 478. 572
Fukushima	3, 999. 548	4, 892. 043	4, 360. 989	18, 954. 668
Iwate	4, 188. 237	1, 470. 219	8, 621. 256	6, 666. 091
Aomori	4, 170. 501	3, 708. 564	1, 886. 926	10, 021. 457
Yamagata	5, 279. 801	3, 940. 738	3, 536. 155	9, 955. 115
Akita	6, 306. 212	7, 678. 463	4, 714. 912	9, 339. 071
Fukui	3, 945. 389	2, 981. 969	2, 456. 813	6, 505. 703
Ishikawa	3, 842. 604	4, 869. 011	1, 784. 856	6, 197. 758
Toyama	2, 720. 040	4, 874. 568	2, 275. 336	4, 788. 229
Tottori	4, 104. 762	930. 230	1, 505. 124	2, 318. 770
Shimane	5, 470. 231	1, 755. 815	2, 870. 994	4, 360. 620
Okayama	5, 914. 691	2, 961. 298	4, 048. 494	6, 049. 042
Hiroshima	7, 128. 877	5, 652. 459	5, 233. 769	3, 679. 866
Yamaguchi	6, 830. 475	4, 105. 838	4, 518. 071	4, 525. 614
Wakayama	8, 047. 633	3, 641. 944	2, 161. 028	3, 419. 149
Tokushima	4, 367. 488	2, 426. 180	2, 459. 549	3, 260. 384
Yehime	8, 886. 354	6, 087. 371	5, 524. 059	5, 147. 326
Kōchi	3, 865. 567	1, 466. 973	2, 107. 728	1, 993, 520
Fukuoka	11, 777. 579	4, 434. 932	5, 939. 471	4, 838, 727
Oita	5, 792. 734	1, 494. 596	3, 283. 304	2, 524. 404
Saga	4. 691. 773	3, 480. 255	1, 915, 722	3, 536. 318
Kumamoto	6, 674. 821	6, 760. 893	3, 171. 656	5, 282. 087
Miyazaki	1, 464. 030	502. 760	667 584	1, 669. 214
Kagoshima	5, 937. 079	2, 230. 346	1, 655. 832	3, 732. 750
Okinawa	850. 694	817. 773	177. 318	462. 995
Sapporo	1, 790. 303	754. 569	1, 115. 471	2, 651. 820
Nemuro	127. 721	31. 985	454. 081	494. 366
Total	277, 689. 274	217, 486. 456	182, 247. 919	357, 326. 497

indergärten, &c., for the sixteenth year of Meiji (1883)—(Continued).

xpenses for buildings.	Expenses for repairs.	Expenses for the management of business of school committee.	Miscellaneous.	Total.
yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	*yen s. r.*
6,909.006	6,176.919	3,935.173	9,186.583	145,633.339
60,778.690	17,761.984	2,571.306	33,701.656	399,317 696
38,548.483	32,714.749	3,311.104	35,407.354	532,414.428
....	15,880.715	1,457.714	15,335.638	229,600.100
49,605.188	20,292.355	4,616.069	41,093.966	461,261.296
....	7,522.172	1,543.365	8,168.973	155,915.396
42,550.379	37,176.119	1,250.319	45,754.241	544,930.587
10,007.195	5,385.938	912.984	25,537.305	101,414.432
5,643.961	18,204.496	3,121.928	26,708.233	330,882 225
20,428.354	8,961.403	1,245.865	27,075.186	277,874.133
11,148.347	9,648.155	1,332.614	16,569.063	194,119.691
54,015.145	14,483.257	1,104.246	18,991.534	351,130.232
22,233.516	8,824.148	1,137.809	11,344.439	196,118.734
43,428.540	14,018.807	3,096.844	20,501.257	318,252.012
44,309.874	16,038.963	2,145.458	46,882.563	358,151.500
51,918.025	16,112.067	2,540.399	25,434.371	350,472.697
21,580.718	5,455.319	942.539	11,642.436	162,906.944
19.447.789	20,969.740	2,243.359	25,024.175	283,788,743
13,168.935	15,686.038	1,360.488	23,285.303	276,196 221
63,259.686	26,394.170	4,392.488	38,726.478	574,140.791
12,000.000	15,089.841	691.598	13,599.216	257,875.164
6,731.530	22,286.942	2,074.594	32,247.263	259,858.882
13,736.524	7,270.718	1,888.129	19,233.759	172,428 538
7,080.476	8,377.396	871.781	11,047.067	150,831.602
13,967.236	10,383.376	1,062.815	17,110.131	197,441.059
9,635.298	13,913.838	3,305.632	14,016 234	217,380 775
4,618.235	8,307.657	979.511	13,299.902	148,625 416
15,701.188	8,339.619	8,615.510	9,947.903	243,031.144
7,002.413	8,050.994	1,248.622	9,780.228	152,422.739
2,248 942	8,906.632	857.186	6,118.524	77,824.983
8,920.774	5,478.679	1,621.682	8,832.374	138,792.707
18,904.868	13,910.041	2,105.771	31,434.550	260,514.836
13,503.105	11,820.187	2,945.079	15,680.658	216,500.151
26.904.383	8,442.057	3,484.708	16,608.218	198,691.682
16.467.668	6,255.028	1,589.572	14,188.858	154,884.548
15,047.968	7,164.703	2,586.412	9,679.506	153,223,199
34,076.706	18,181.557	3,445.998	20,632.815	315,023.960
6,819.461	4,092.884	1,280.722	6,470.063	129,213.606
10,933.840	14,946.789	2,051.875	15,997.570	333,272.231
9,726.994	6,719.645	908.926	12,019.426	151,285.196
4,838.299	5,773.892	654.721	4.834.203	118,142.321
775.815	10,501.415	556.716	9,552.357	195,699.045
....	3,280,771	504.267	2,997.187	58,648.509
139.689	11,320.470	795.971	14,791.388	211,234.260
1,808.058	470.010	20.503	6,819.697	24,829.739
10,247.822	2,200.971	93.360	4,883.101	45,252.443
....	394.487	25.970	907.415	6,958.162
850,999.123	554,708.063	85,029.702	849,159.957	10,832,388.094

TABLE VI.—PART I.—*Showing the estimated amount of educational expenses (among the*

NOTE.—Part 1 shows the estimated and actual amounts, together with a comparison between them, as well as the difference between these amounts and the corresponding ones of the previous year, of the educational expenses among the total amount of the estimated local expenses for the 16th year of Meiji (1883). The city-district, ward, and village educational aid, is here included.

In part 2 the expenses mentioned in part 1 are divided into the respective items.

Part 3 shows the expenses of each normal school.

Part 4 shows the expenses of of each middle school.

Part 5 shows the expenses of each professional school, higher female school, and of each kindergarten and library.

In part 6 are classified the sources of income for the various items of the expenses mentioned in part 2.

Part 7 shows in detail the various items of the local expenses; namely, the police expenses, divided into those of buildings and repairs of the police offices; the public work expenses, into those of the aids of the city-district, ward, or village public works; the educational expenses, into the city district, ward, or village educational aids; the gun or ku expenses, into the items of buildings and repairs, the salary and travelling expenses of the gun or ku officers, and the other various expenses;

Name of fu or ken.	Estimated amount.	Amount decided on.	Compared with the
			Increase.
	yen s. r.	*yen s. r.*	*yen s. r.*
Tokiō	17, 809. 000	12, 784. 050	
Kiōto	31, 049. 833	23, 059. 914	
Ōsaka	52, 067. 969	42, 611. 027	
Kanagawa	22, 327. 870	8, 947. 730	
Hiōgo	104, 162. 400	94, 223. 200	
Nagasaki	43, 322. 002	32, 317. 656	
Niigata	103, 049. 388	76, 684. 775	
Hakodate	29, 179. 000	26, 206. 240	
Saitama	89, 911. 430	85, 224. 519	
Chiba	42, 655. 088	38, 026. 071	
Ibaraki	47, 563. 070	34, 320. 570	
Gumba	58, 081. 262	30, 748. 722	
Tochigi	39, 600. 586	35, 269. 637	
Miye	63, 880. 000	63, 555. 575	
Aichi	36, 816. 627	81, 335. 105	
Shidzuoka	26, 466. 965	43, 719. 045	17, 252. 080
Yamanashi	17, 516. 000	14, 672. 000	
Shiga	19, 408. 910	15, 041. 380	
Gifu	64, 499. 000	55, 891. 000	
Nagano	43, 145. 740	36, 550. 940	
Miyagi	35, 389. 659	30, 275. 194	
Fukushima	49, 397. 006	39, 525. 595	
Iwate	59, 024. 003	41, 923. 549	
Aomori	26, 849. 664	26, 849. 664	
Yamagata	41, 069. 450	23, 517. 824	
Akita	36, 053. 258	29, 983. 092	
Fukui	34, 971. 310	34, 494. 630	
Ishikawa	65, 996. 605	63, 357. 925	
Toyama	48, 868. 953	38, 399. 377	
Tottori	13, 290. 422	10, 498. 401	
Shimane	19, 837. 570	8, 905. 583	
Okayama	49, 840. 430	48, 649. 960	
Hiroshima	46, 142. 564	40, 412. 522	
Yamaguchi	10, 618. 130	10, 536. 290	
Wakayama	42, 110. 494	38, 316. 553	
Tokushima	27, 675. 190	26, 556. 270	
Yehime	36, 653. 000	32, 286. 000	
Kōchi	28, 564. 280	26, 866. 280	
Fukuoka	71, 604. 000	76, 435. 000	4, 831. 000
Ōita	23, 873. 547	23, 873. 547	
Saga	33, 205. 000	24, 020. 000	
Kumamoto	68, 728. 500	52, 165. 490	
Kagoshima	16, 521. 144	14, 958. 591	
Okinawa	16, 425. 000	11, 500. 000	
Sapporo	17, 646. 000	17, 646. 000	
Nemuro	4, 500. 000	4, 500. 000	
Total	1, 877, 461. 379	1, 597, 642. 013	

local expenses) decided by the fu or ken assemblies for the sixteenth year of Meiji (1883).

the penitentiary expenses, into the items of repairs; and the miscellaneous expenses, into the items of gas-lamps, post-offices, fire companies, &c., in all the fu or ken, while in the three ken of Hakodate, Sapporo, and Nemuro, the additional item of rewards for killing noxious animals is included in the miscellaneous expenses.

Part 8 indicates the sources of income for the local expenses.

The ken of Miyazaki is here omitted, owing to the absence of the item of educational expenses among the various expenses of the ken for the sixteenth year of Meiji (1883).

No comparison with the previous year is taken for the ken of Nagasaki and five others, as the real amounts could not be obtained, owing to the recent separation of these ken.

Although, in some normal schools, some subjects which do not belong to the normal course are taught, yet the expenses required for these additional subjects, being disbursed together with those of the normal course, are included in the expenses of such normal schools.

That the amount of the educational expenses in part 1 does not agree with that in parts 2 and 6 is due to the fact that the educational expenses in the latter two parts are partly disbursed from contributions, and sanitary and hospital expenses.

The names of fu or ken, where there is no school of the kind referred to, are omitted in each part.

estimated amount.	Compared with the previous year.		Sources of income.
Decrease.	Increase.	Decrease.	
yen s. r.	*yen s. r.*	*yen s. r.*	
5,024.950	7,021.800	....	Local tax.
7,989.910	8,532.938	....	Do.
9,456.942	1,144.038	....	Local tax, &c.
13,380.140	....	24,020.438	Local tax.
9,939.200	2,857.736	....	Do.
11,004.406	....	....	Do.
26,364.613	....	12,705.465	Local tax, &c.
2,972.760	7,215.740	....	Aid from treasury, local income, &c.
4,686.911	....	199.956	Local tax.
4,629.017	....	4,132.575	Local tax, &c.
13,242.500	....	8,179.528	Local tax.
27,332.540	....	7,493.251	Do.
4,330.949	201.003	....	Do.
324.425	6,025.931	....	Do.
5,481.522	897.168	....	Do.
....	19,567.315	....	Do.
2,844.000	....	1,620.000	Do.
4,457.530	339.250	....	Do.
8,608.000	....	3,316.000	Do.
6,594.800	1,928.240	....	Do.
5,114.465	....	599.065	Do.
9,871.411	7,798.775	....	Do.
17,100.454	12,121.549	....	Do.
....	1,222.664	....	Do.
17,552.126	....	3,312.876	Do.
6,070.166	7,643.252	....	Local tax, special funds.
476.680	....	1,840.350	Local tax.
2,638.680	....	....	Do.
10,469.576	....	....	Do.
2,801.021	2,660.216	....	Do.
10,931.987	157.833	....	Do.
1,190.450	....	486.545	Do.
5,730.042	....	1,124.058	Do.
76.840	....	1,103.270	Do.
3,793.941	10,211.583	....	Local tax, &c.
1,118.920	1,801.080	....	Do.
4,367.000	12,503.000	....	Local tax.
1,698.000	438.389	....	Do.
....	11,565.000	....	Do.
....	2,014.485	....	Do.
9,185.000	....	....	Do.
16,563.010	....	13,044.788	Do.
1,562.558	....	....	Do.
4,925.000	500.000	....	Fund from treasury.
....	5,487.000	....	Aid from treasury, local income.
....	1,500.000	....	Do.
279,819.366	....	....	

TABLE VI.—PART 2.—*Showing the estimated amount of educational expenses (among t*

Name of fu or ken.	Normal school expenses.	Middle school expenses.	Professional school expenses.	Higher female school expenses.	Kindergarten and library expenses.
	yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	*yen s. r.*
Tōkiō	6, 723. 750	6, 060. 300			
Kiōto	5, 647. 376	7, 940. 376	9, 005. 162		
Osaka	32, 791. 347	7, 448. 930			
Kanagawa	8, 447. 730				
Hiogo	11, 141. 250		16, 745. 959		
Nagasaki	9, 363. 122	6, 914. 690	15, 859. 244		
Niigata	29, 206. 200		47, 478. 575		
Hakodate	12, 801. 000		5, 743. 040		
Saitama	9, 424. 054				
Chiba	13, 399. 451	3, 196. 834	20, 785. 786		
Ibaraki	9, 147. 720	13, 434. 725	11, 738. 125		
Gumba	9, 182. 020	12, 570. 222		4, 142. 420	
Tochigi	7, 828. 437	6, 729. 004			
Miye	10, 218. 020	3, 309. 026	11, 861. 529		
Aichi	9, 046. 594	7, 258. 941	10, 446. 570		
Shidzuoka	7, 419. 045				
Yamanashi	11, 104. 000		2, 481. 000	1, 968. 000	
Shiga	13, 554. 180				
Gifu	16, 000. 000		11, 831. 000	1, 900. 000	
Nagano	15, 645. 440		17, 317. 500		
Miyagi	10, 546. 935	7, 556. 179	10, 756. 400		675. 680
Fukushima	16, 626. 000		18, 399. 595		
Iwate	10, 670. 925	9, 277. 925	14, 424. 900		
Aomori	19, 414. 664		5, 435. 000		
Yamagata	13, 868. 500				
Akita	16, 101. 676	4, 802. 133	8, 488. 863		590. 420
Fukui	9, 421. 590	3, 348. 040			
Ishikawa	6, 882. 650		19, 551. 670		
Toyama	7, 642. 377				
Tottori	5, 036. 370	4, 176. 891			
Shimane	4, 385. 743	3, 911. 840			
Okayama	13, 997. 120		9, 652. 860		
Hiroshima	8, 567. 625	7, 784. 820	11, 585. 414		
Yamaguchi	8, 475. 400				
Wakayama	15, 507. 640	6, 008. 720	16, 800. 193		
Tokushima	7, 162. 170	7, 504. 300	9, 123. 940	1, 969. 860	
Yehime	10, 917. 000	14, 600. 602	6, 720. 000		
Kōchi	8, 222. 820	7, 608. 200	10, 405. 260		
Fukuoka	6, 094. 000	24, 430. 000	18, 894. 000		
Oita	8, 064. 777		5, 821. 190		
Saga		18, 219. 000			
Kumamoto	6, 946. 280	4, 209. 480	14, 197. 230		
Kagoshima	7, 957. 521	2, 263. 754	7, 001. 070		243. 000
Okinawa	8, 371. 000	1, 641. 000			
Sapporo	14, 808. 440				
Nemuro					
Total	493, 779. 959	202, 211. 432	368, 551. 066	10, 000. 280	1, 509. 100

local expenses) decided by the fu or ken assemblies for the sixteenth year of Meiji (1883).

Expenses of educational meetings, for encouragement of education, &c.	Expenses of students sent out of jurisdiction of each fu or ken for the purpose of education.	Aid towards city-district, ward, or village educational expenses.	Total.	Sources of income.
yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	
....	....	....	12,784.050	Local tax.
....	....	467.000	23,059.914	Do.
....	....	2,370.750	42,611.027	Local tax, &c.
....	....	500.000	8,947.730	Local tax.
....	336.000	66,000.000	94,223.200	Do.
....	180.600	....	32,317.656	Do.
....	....	....	76,684.775	Local tax, &c.
....	....	8,532.200	27,076.240	Aid from treasury, local income, &c.
392.160	935.000	74,473.305	85,224.519	Local tax.
....	....	644.000	38,026.071	Local tax, &c.
....	....	....	34,320.570	Local tax.
1,502.460	3,345.600	....	30,748.722	Do.
312.196	....	20,400.000	35,269.637	Do.
....	....	38,167.000	63,555.575	Do.
....	....	4,583.000	31,335.105	Do.
....	....	36,300.000	43,719.045	Do.
405.000	875.000	300.000	17,153.000	Do.
....	....	1,487.200	15,041.380	Do.
....	....	26,160.000	55,891.000	Do
1,000.000	588.000	2,000.000	36,550.940	Do.
740.000	....	....	30,275.194	Do.
1,800.000	....	2,700.000	39,525.595	Do.
5,549.799	....	2,000.000	41,923.549	Do.
....	....	2,000 000	26,849.664	Do.
1,220.824	....	8,428.000	23,517.3 4	Do.
....	....	....	29,983.092	Local tax, special fund.
210.000	....	21,515.000	34.494.630	Local tax.
391.250	6,522.605	30,009.750	63,357.925	Do.
367.400	4,500.000	25,889.600	38.399.377	Do.
....	....	1,285.140	10,498.401	Do.
....	....	608.000	8,905.583	Do.
....	....	25,000.000	48,649.980	Do.
2,141.400	1,054.000	9,279.763	40,412.522	Do.
1,340.890	....	720 000	10,536.290	Do.
....	....	....	38,316.553	Local tax, &c.
796.000	....	....	26,556.270	Do.
7,649.000	....	100.000	39,986.602	Do.
....	....	630.000	26,866.280	Local tax.
428.000	414.000	26,175.000	76,435.000	Do.
2,317.900	....	7,669.680	23,873.547	Do.
....	4,051.000	1,750.000	24,020.000	Do.
1,362.500	....	25,450.000	52,165.490	Do.
....	....	....	17,465.345	Local tax, &c.
....	....	1,488.000	11,500.000	Fund from treasury.
....	....	2,837.560	17,646.000	Aid from treasury, local income.
....	....	4,500.000	4,500.000	Do.
29,926.779	22,801.805	482,419.948	1,611,200.369	

TABLE VI.—PART 3.—*Showing the items of the estimated expen*

Name of fu or ken.	Name of school.	Salary.	Other allowances.	Travelli expens
		yen. s. r.	yen. s. r.	yen s
Tōkiō	Tōkiō normal school	2,808.000	436.650	31.
Kioto	Kioto normal school	3,420.000	228.250	65.
Osaka	Osaka normal school	4,032.000	378.180	232.
	Sakai normal school	4,032.000	378.180	186.
	Nara normal school	3,912.000	378.180	201.
	Yoshino normal school	1,764.000	238.530	186.4
Kanagawa	Kanagawa normal school	3,180.000	252.000	73.4
Hiōgo	Kōbe normal school	4,488.000	440.750	121.
Nagasaki	Nagasaki normal school	2,808.000	735.940	186.
Niigata	Niigata-Gakko	11,724.000	1,239.100	331.
Hakodate	Hakodate normal school	3,708.000	772.000	75.
Saitama	Saitama normal school	5,224.000	505.625	......
Chiba	Chiba normal school	4,298.000	408.500	43.
	Chiba female normal school	1,560.000	328.000	60.
Ibaraki	Ibaraki normal school	3,396.000	714.150	....
Gumba	Gumba normal school	4,500.000	323.620	102.
Tochigi	Tochigi normal school	3,468.000	471.550	50.
Miye	Miye normal school	4,536.000	197.500	155.
Aichi	Aichi normal school	3,564.000	780.120	67.
Shidzuoka	Shidzuoka normal and middle school.	5,064.000	545.480	183.
Yamanashi	Kiten Kuan	5,748.000	741.000	400.
Shiga	Shiga normal school	5,400.000	637.000	435.
Gifu	Gifu normal school	10,723.000	855.000	301.
Nagano	Nagano normal school	5,004.000	372.000	600.7
Miyagi	Miyagi normal school	4,908.000	514.000	....
Fukushima	Fukushima normal school	4,896.000	528.000	283.
Iwate	Iwate normal school	5,022.000	435.925	133.
Aomori	Aomori normal school	5,028.000	514.000	344.
	Aomori female normal school	1,212.000	86.000	34.
	Aomori elementary normal school.	1,296.000	216.000	160.
Yamagata	Yamagata normal school	6,168.000	....	....
Akita	Akita normal school	3,828.000	900.000	....
	Akita female normal school	2,028.000	571.500	....
Fukui	Fukui normal school	2,436.000	205.320	406.
	Obama normal and middle school.	1,944.000	105.660	301.
Ishikawa	Ishikawa normal school	4,596.000	449.500	123.
Toyama	Toyama normal school	4,525.000	408.700	303.
Tottori	Tottori normal school	2,832.000	204.750	....
Shimane	Matoni normal school	1,500.000	187.455	57.
	Hamadi normal school	300.000	123.288	15.
Okayama	Okayama normal school	6,780.000	753.600	....
Hiroshima	Hiroshima normal school	2,730.000	436.800	....
Yamaguchi	Yamaguchi normal school	2,679.000	402.660	662.
Wakayama	Wakayami normal school	3,740.000	708.860	....
Tokushima	Tokushima normal school	2,504.000	181.620	183.
Yehime	Yehime normal school	4,152.000	230.000	257.
Kōchi	Kōchi normal school	2,172.000	203.700	214.
	Kōchi female normal school	984.000	143.100	53.
Fukuoka	Fukuoka normal school	2,970.000	150.000	100.
Ōita	Ōita normal school	2,676.000	380.850	311
Kumamoto	Kumamoto normal school	3,408.000	275.600	190.
Kagoshima	Kagoshima normal school	5,214.000	423.490	117.
Okinawa	Okinawa normal school	3,422.000	1,146.000	301.
Sapporo	Sapporo normal school	2,280.000	1,659.865	600.
	Sōsei-Gakko	3,600.000	328.485	624.
	Total	210,286.000	24,922.553	11,4

the fu or ken normal schools for the sixteenth year of Meiji (1883).

Students' expenses.	Expenses for repairs.	School expenses.	Total.	Sources of income.
yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	
2, 172. 000	228. 000	968. 730	6, 723. 750	Local tax.
....	650. 236	1, 252. 390	5, 647. 376	Do.
3, 840. 000	150. 000	947. 755	9, 599. 935	Do.
3, 840. 000	120. 000	947. 152	9, 714. 932	Do.
8, 840. 000	100. 000	1, 238. 779	9, 865. 559	Do.
960. 000	40. 000	412. 001	3, 610. 921	Local tax, &c.
3, 739. 000	132. 500	1, 068. 830	8, 447. 730	Local tax.
4, 920. 000	150. 000	1, 022. 500	11, 141. 250	Do.
5, 621. 000	171. 000	371. 182	9, 363. 122	Do.
8, 616. 000	1, 670. 500	5, 626. 600	29, 206. 200	Local tax, &c.
5, 624. 000	480. 000	1, 931. 200	13, 301. 000	Aid from treasury, local income.
2, 489. 000	280. 000	893. 429	9, 424. 054	Local tax.
2, 502. 500	522. 840	1, 584. 403	9, 813. 543	Do.
617. 500	815. 000	704. 808	3, 585. 908	Do.
1, 887. 000	2, 262. 500	888. 070	9, 147. 720	Do.
2, 646. 000	820. 000	1, 292. 400	9, 182. 020	Do.
1, 980. 000	385. 660	1, 533. 227	7, 828. 437	Do.
8, 438. 600	280. 980	1, 607. 340	10, 218. 020	Do.
3, 672. 000	250. 000	706. 974	9, 046. 594	Do.
....	861. 390	764. 675	7, 419. 045	Do.
2, 400. 000	200. 000	1, 615. 000	11, 104. 000	Do.
4, 588. 000	850. 000	2, 143. 380	13, 554. 180	Do.
1, 800. 000	800. 000	1, 517. 000	16, 000. 000	Do.
5, 760. 000	2, 158. 500	1, 690. 240	15, 645 440	Do.
3, 840. 000	266. 000	1, 018. 935	10, 546. 935	Do.
5, 945. 500	8, 485. 322	1, 484. 278	16, 626. 000	Do.
8, 720. 000	200. 000	1, 160. 000	10, 670. 925	Do.
8, 480. 000	2, 709. 000	1, 114. 000	13, 189. 000	Do.
....	217. 000	317. 000	1, 866. 000	Do.
1, 144. 000	120. 000	1, 423. 464	4, 359. 664	Do.
5, 287. 000	250. 000	2, 163. 500	13, 868. 500	Do.
4, 368. 000	1, 100. 000	1, 315. 086	11, 601. 686	Local tax, special fund.
1, 095. 000	100. 000	705. 490	4, 499. 990	Local tax.
2, 025. 000	160. 000	649. 430	5, 882. 150	Do.
540. 000	50. 000	690. 180	3, 539. 440	Do.
....	200. 000	1, 307. 830	6, 882. 650	Do.
....	1, 393. 603	1, 111. 214	7, 642. 377	Do.
....	882. 820	1, 116. 800	5, 036. 370	Do.
960. 000	60. 000	450. 000	8, 244. 855	Do.
480. 000	60. 000	162. 400	1, 140. 888	Do.
8, 931. 000	700. 000	1, 832. 520	18, 997. 120	Do.
4, 457. 325	148. 000	795. 500	8, 567. 625	Do.
8, 748. 280	200. 000	798. 370	8, 475. 400	Do.
6, 376. 000	8, 730. 750	952. 030	15, 507. 640	Local tax, &c.
8, 405. 600	150. 000	735. 050	7, 162. 170	Local tax.
5, 400. 000	164. 000	714. 000	10, 917. 000	Do.
8, 800. 820	100. 000	352. 000	6, 842. 520	Do.
....	30. 000	170. 000	1, 380. 300	Do.
2, 275. 000	81. 000	518. 000	6, 094. 000	Do.
8, 000. 000	206. 917	1, 489. 410	8, 064. 777	Do.
2, 160. 000	240. 000	672. 680	6, 946. 280	Do.
1, 000. 000	180. 000	1, 023. 031	7, 957. 521	Do.
2, 900. 000	150. 000	452. 000	8, 371. 000	Fund from treasury.
2, 160. 000	150. 000	1, 284. 680	8, 194. 545	Aid from treasury, local income.
....	800. 000	1, 775. 410	6, 613. 895	Do.
154, 450. 475	30, 655. 518	62, 482. 853	494, 279. 959	

TABLE VI.—PART 4.—*Showing the items of the estimated expenses of*

Name of fu or ken.	Name of school.	Salary.	Other allowances.	Travelling expenses.
		yen s. r.	*yen s. r.*	*yen s. r.*
Tōkiō	Tōkiō Middle School	3,808.000	513.220	
Kiōto	Kiōto Middle School	5,100.000	351.750	85.500
Ōsaka	Ōsaka Middle School	4,032.000	332.880	261.000
Nagasaki	Nagasaki Middle School	4,644.000	273.690	258.000
Chiba	Chiba Middle School	2,340.000	94.400	80.000
Ibaraki	Ibaraki First Middle School	1,764.000	239.300	
	Ibaraki Second Middle School	1,716.000	265.950	
	Ibaraki Third Middle School	858.000	150.925	
Gumba	Gumba Middle School	5,364.000	453.240	120.000
Tochigi	Tochigi First Middle School	3,336.000	400.920	35.710
Miye	Tsu Middle School	2,232.000	141.000	45.600
Aichi	Aichi Middle School	4,824.000	558.520	40.000
Miyagi	Miyagi Middle School	5,964.000		
Iwate	Iwate Middle School	6,636.000	372.925	160.000
Akita	Akita Middle School	2,472.000	392.500	
Fukui	Fukui Middle School	2,424.000	105.660	53.200
Tottori	Tottori Middle School	1,956.000	189.875	
	Yonego Middle School	1,140.000	127.350	
Shimane	Matsui Middle School	1,608.000	202.920	87.400
	Hamada Middle School	828.009	177.920	75.300
Hiroshima	Hiroshima Middle School	2,946.000	433.670	
	Fukuyama Middle School	2,328.000	324.320	
Wakayama	Wakayama Middle School	3,852.000	444.960	
Tokushima	Tokushima Middle School	2,958.000	137.040	57.500
	Do	920.000	52.860	31.500
	Tomioka Middle School	920.000	52.860	31.500
	Kawashima Middle School	920.000	52.860	31.500
Yehime	Takamatsu Middle School	1,788.000	281.800	
	Eayama Middle School	778.000		
	Saijo Middle School	658.000	153.000	46.000
	Kameyama Middle School	996.000	262.000	25.000
	Ochi Middle School	864.000	44.500	7.500
	Matsuyama Middle School	2,280.000	234.800	
	Ōsu Middle School	720.000	45.000	15.000
	Nanyō Middle School	2,076.000	173.000	59.000
Kōchi	Kōchi Middle School	2,748.000	167.100	76.000
	Nakamura Middle School	852.000	88.200	36.400
	Sagawa Middle School	852.000	88.200	12.100
	Aki Middle School	852.000	88.200	12.100
	Akaoka Middle School	756.000	88.200	9.700
Fukuoka	Fukuoka Middle School	2,952.000	108.000	120.000
	Kurume Middle School	2,952.000	108.000	120.000
	Yanagawa Middle School	2,952.000	108.000	120.000
	Toyotsu Middle School	2,952.000	108.000	120.000
	Amaki Middle School	2,688.000	54.000	120.000
	Ashiya Middle School	2,688.000	54.000	120.000
Saga	Karatsu Middle School	1,944.000	170.000	108.000
	Kajima Middle School	1,836.000	167.000	102.000
	Saga Middle School	1,944.000	170.000	108.000
	Takeo Middle School	1,644.000	115.000	91.000
	Ogi Middle School	1,836.000	167.000	102.000
	Kanzaki Middle School	1,176.000	154.000	65.000
	Todoroki Middle School	1,068.000	151.000	59.000
	Arita Middle School	984.000	150.000	55.000
Kumamoto	Kumamoto Middle School	2,748.000	179.000	133.000
Kagoshima	Kagoshima Middle School	1,884.000	178.880	39.000
Okinawa	Shiri Middle School	1,044.000	426.000	
	Total	129,402.000	11,119.996	3,334.510

the fu or ken middle schools for the sixteenth year of Meiji (1883).

Students' expenses.	Expenses for repairs.	School expenses.	Total.	Sources of income.
yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	
....	120.000	1,619.080	6,060.300	Local tax.
....	930.236	1,472.890	7,940.376	Do.
....	1,016.000	1.807.050	7.448.930	Do.
....	289.000	1,450.000	6,914.690	Do.
162.000	60.000	460.434	3,196.834	Local tax, &c.
....	1,762.000	421.880	4,187.180	Local tax.
....	200.000	646.780	2,828.730	Do.
....	4,635.000	774.890	6,418.815	Do.
4,620.000	402.982	1,616.000	12,576.222	Do.
1,323.000	264.350	1,369.024	6,729.004	Do.
....	53.141	837.285	3,309.026	Do.
....	1,116.421	720.000	7,258 941	Do.
....	300.000	1,292.179	7,556.179	Do.
764.000	100.000	1,245.000	9,277.925	Do.
797.663	100.000	1,039.970	4,802.133	Local tax, special fund.
....	80.000	685.180	3,348,040	Local tax.
....	....	377.875	2,523.750	Do.
....	86.491	299.300	1,653.141	Do.
....	60.000	571.000	2,529.320	Do.
....	18.000	283.300	1,382.520	Do.
....	64.000	830.230	4,273.900	Do.
....	127.200	730.100	3,510.420	Do.
380.000	150.000	1,181.760	6,008.720	Local tax, &c.
....	100.000	600.920	3,853.460	Local tax.
....	30.000	151,920	1,186.280	Do.
....	....	223.920	1,228.280	Do.
....	80.000	151.920	1,236.280	Do.
....	....	619.700	2,689.500	Local tax, &c.
....	....	426.000	1,204.000	Do.
....	....	346.000	1,203.000	Do.
....	100.000	213.500	1,596.500	Do.
....	....	196.000	1,112.000	Do.
....	....	517,371	3,031.671	Do.
....	....	356.931	1,136.931	Do.
....	....	319.000	2,627.000	Do.
....	30.000	218.000	3,239.100	Local tax.
....	40.000	120.000	1,136.600	Do.
....	40.000	120.000	1,112.300	Do.
....	40.000	120.000	1,112.300	Do.
....	40.000	114.000	1,007.900	Do.
....	100.000	1,451.950	4,731.950	Do.
....	100.000	889.950	4,169.950	Do.
....	100.000	867.950	4,147.950	Do.
....	100.000	830.950	4,110.950	Do.
....	88.000	713.950	3,663.950	Do.
....	88.000	654.950	3,604.950	Do.
....	118.000	409.000	2,749.000	Do.
....	107.000	372.000	2,584.000	Do.
....	162.000	427.000	2,811.000	Do.
....	82.000	328.000	2,260.000	Do.
....	116.000	316.000	2,567.000	Do.
....	65.000	506.000	1,966.000	Do.
....	40.000	476.000	1,794.000	Do.
....	40.000	259.000	1,488.000	Do.
....	200.000	948.880	4,209.480	Do.
....	22.930	144.444	2,263.754	Contribution.
....	24.000	147.000	1,641.000	Fund from treasury.
8,046.663	13,987.751	36,320.218	202,211.182	

TABLE VI.—PART 5.—*Showing the items of the estimated expenses of the fu*

Name of fu or ken.	Name of school.	Salary.	Other allowances.	Traveling expenses.
		yen s. r.	*yen s. r.*	*yen s. r.*
Kiōto	Kiōto Medical School	6,024.000	403.300	85.500
Hiōgo	Kōbe Medical School	7,104.000	527.950	100.000
	Kōbe Pharmaceutical School	240.000	36.000	
	Kōbe Commercial School			
Nagasaki	Nagasaki Medical School	6,456.000	263.940	359.000
	Nagasaki Foreign Langauge School.	3,528.000	202.940	196.000
Niigata	Niigata Medical School	13,034.400	1,880.050	240.000
Hakodate	Hakodate Nautical School	1,800.000	288.000	301.800
Chiba	Chiba Medical School	9,750.000	1,003.200	236.300
Ibaraki	Ibaraki Medical School	6,036.000	1,146.350	
Gumba	Gumba Female School	1,560.000	191.620	36.000
Miye	Miye Medical School	8,232.000	94.500	68.400
Aichi	Aichi Medical School	6,708.000	786.570	200.000
Yamanashi	Yamanashi Female School	1,344.000	196.000	15.000
Gifu	Gifu Medical School	7,320.000	600.000	150.000
	Gifu Female School	1,032.000	164.000	25.000
Nagano	Nagano Medical School	7,680.000	1,148.000	124.000
Miyagi	Miyagi Medical School	7,212.000	420.000	
	Miyagi Library	252.000		
Fukushima	Fukushima Medical School	8,064.000	438.000	159.600
	Fukushima Agricultural School	924.000	805.750	87.500
Iwate	Iwate Medical School	8,664.000	1,066.900	183.000
Aomori	Medical School	3,048.000	134.000	131.000
Akita	Akita Medical School	4,860.000	268.000	
	Akita Library	204.000	79.500	
Ishikawa	Ishikawa Professional School	4,488.000	800.700	55.810
	Ishikawa Medical School	8,412.000	359.980	55.810
Okayama	Okayama Medical School	7,020.000	441.000	
Hiroshima	Hiroshima Medical School	4,686.000	238.920	
	Agricultural School	1,080.000	296.420	
Wakayama	Wakayama Medical School	8,582.000	892.280	
Tokushima	Tokushima Medical School	7,346.000	142.740	199.500
	Tokushima Female School	1,556.000	100.440	17.500
Yehime	Matsuyama Medical School	5,184.000	152.000	450.000
Kōchi	Kōchi Medical School	5,184.000	582.660	117.000
Fukuoka	Fukuoka Medical School	9,276.000	576.000	71.000
	Fukuoka Agricultural School	2,076.000	186.000	150.000
Kumamoto	Kumamoto Medical School	7,056.000	832.600	190.000
Kagoshima	Kagoshima Medical School	5,304.000	326.020	148.200
	Kagoshima Kindergarten	343.000		
Total		198,519.400	16,572.330	4,103.520
Niigata	Niigata Agricultural Institution	2,472.000	1,092.300	308.000
Hakodate	Medical Institution			
Yamanashi	Agricultural Institution	960.000	689.000	75.000
Ishikawa	Ishikawa Agricultural Institution	1,414.500	108.820	55.000
Oita	Oita Medical School	3,648.000	298.200	334.600
Total		8,494.500	2,188.820	772.600
Grand total		207,013.900	18,760.650	4,876.120

TABLE VI.—PART 6.—*Showing the sources of income for educational expenses*

Sources of income.	Local tax.	Fund from treasury.	Aid from treasury, and local income.
	yen s. r.	*yen s. r.*	*yen s. r.*
Expenses of normal schools	438,410.573	8,371.000	27,609.440
Expenses of middle schools	186,856.579	1,641.000	
Expenses of professional schools	862,408.026		4,789.800
Expenses of female higher schools	10,000.280		
Expenses of kindergärten and libraries	1,266.100		
Expenses of educational meetings, &c	29,426.779		
Expenses of students sent out of each jurisdiction.	22,801.805		
City-district, ward, or village aid	465,062.188	1,488.000	15,869.760
Total	1,516,232.330	11,500.000	48,269.000

or ken professional schools, &c., for the sixteenth year of Meiji (1883).

Students' expenses.	Expenses for repairs.	School expenses.	Total.	Sources of income.
yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	
....	76.942	2,415.420	9,005.162	Local tax.
4,800.000	300.000	3,015.000	15,846.950	Do.
....	....	123.000	399.000	Do.
....	....	a500.000	a500.000	Do.
....	175.000	779.182	8,023.122	Do.
....	289.000	3,610.182	7,826.122	Do.
2,985.000	520.000	10,477.975	28,637.425	Local tax, &c.
1,710.000	50.000	723.240	4,873.040	Aid from treasury, local income, &c.
2,321.000	269.600	7,205.686	20,785.786	Local tax.
1,248.000	270.000	3,037.775	11,738.125	Do.
1,400.000	250.000	704.800	4,142.420	Do.
b840.000	764.368	1,862.261	11,861.529	Do.
1,234.000	300.000	1,218.000	10,446.570	Do.
....	150.000	283.000	1,988.000	Do.
192.000	600.000	2,969.000	11,831.000	Do.
360.000	70.000	249.000	1,900.000	Do.
1,936.000	1,498.000	4,931.500	17,317.500	Do.
....	300.000	2,824.400	10,756.400	Do.
....	20.000	403.680	675.680	Do.
3,000.000	186.000	1,918.800	13,766.400	Do.
1,164.000	102.145	1,549.800	4,633.195	Do.
....	150.000	4,411.000	14,424.900	Do.
1,426.000	61.000	635.000	5,435.000	Do.
2,442.000	50.000	868.863	8,488.863	Do.
....	10.000	296.920	590.420	Do.
216.000	120.000	683.560	5,864.070	Do.
....	250.000	1,630.010	10,707.800	Do.
555.840	100.000	1.536.020	9,652.860	Do.
1,782.930	804.800	666.870	8,179.520	Do.
1,184.004	50.000	795.470	3,405.894	Do.
2,530.000	564.000	4,281.913	16,800.193	Do.
....	100.000	1,335.700	9,123.940	Local tax, &c.
....	30.000	265.920	1,969.860	Local tax.
....	70.000	864.000	6,720.000	Do.
....	30.000	4,491.000	10,405.260	Do.
900.000	135.000	4,446.000	15,404.000	Do.
....	100.000	978.000	3,490.000	Do.
....	150.000	6,468.630	14,197.230	Do.
....	....	1,222.850	7,001.070	Do.
....	....	....	243.000	Contribution.
34,226.774	8,965.855	86,679.427	349,067.306	
1,448.000	200.000	13,320.850	18,841.150	Local tax (industrial expenses).
....	....	870.000	870.000	Aid from treasury, local income (sanitary and hospital expenses.
....	120.000	637.000	2,481.000	Local tax (industrial expenses).
864.000	103.000	434.480	2,979.800	Do.
900.000	120.000	520.390	5,821.190	Local tax (sanitary and hospital expenses).
3,212.000	543.000	15,782.720	30,993.140	
37,438.774	9,508.855	102,462.147	380,060.446	

a Means aid. *b* Shows the expenses of students sent out of each jurisdiction.

(*among the local expenses*) *for the sixteenth year of Meiji* (1883).

Voluntary contributions.	Special fund.	Interest.	Miscellaneous income.	Total.	Average per school.
yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	*yen s. r.*	*yen s. r.*
2,999.220	1,200.000	a15,189.726	....	493,779.959	8,977.817
2,863.754	2,552.663	1,096.834	7,200.602	202,211.432	3,547.569
953.240	....	....	400.000	368,551.066	9,698.712
....	....	....	....	10,000.280	2,500.070
243.000	....	....	....	1,509.100	503.033
....	....	....	....	29,926.779	....
....	....	....	....	22,801.805	....
....	....	....	....	482,419.948	....
7,059.214	3,752.663	16,286.560	7,600.602	1,611,200.369	....

a Shows that the expenses of professional school are also included in this item.

TABLE VI.—PART 7.—*Showing the estimated amo*

Name of fu or ken.	Industrial expenses.	Miscellaneous expenses for the kochō offices.	Expenses of collecting local taxes.
	yen s. r.	*yen s. r.*	*yen s. r.*
Tōkiō	18. 000	31, 701. 000	....
Kiōto	175. 560	109, 872. 167	1, 565. 600
Ōsaka	1, 570. 754	118, 122. 926	650. 000
Kanagawa	....	97, 113. 102	229. 600
Hiōgo	7, 321. 450	186, 852. 505	530. 000
Nagasaki	1, 957. 910	58, 766. 940	350. 000
Niigata	19, 648. 050	157, 588. 700	1, 920. 000
Hakodate	3, 320. 000	22, 711. 000	500. 000
Saitama	2, 462. 075	99, 155. 000	304. 165
Chiba	2, 772. 764	120, 752. 850	611. 000
Ibaraki	1, 385. 430	129, 318. 271	370. 000
Gumba	4, 005. 340	52, 318. 674	180. 000
Tochigi	1, 173. 800	73, 924. 837	866. 567
Miye	6, 997. 563	125, 599. 516	2, 403. 000
Aichi	4, 225. 320	167, 841. 000	396. 000
Shidzuoka	3, 956. 980	158, 374. 244	329. 715
Yamanashi	3, 496. 000	52, 804. 810	250. 000
Shiga	4, 147. 484	89, 864. 591	772. 840
Gifu	2, 705. 000	88, 065. 000	239. 000
Nagano	5, 940. 900	98, 193. 714	400. 000
Miyagi	4, 044. 950	61, 367. 563	920. 000
Fukushima	3, 007. 800	102, 946. 000	700. 000
Iwate	13, 568. 175	74, 430. 900	250. 000
Aomori	6, 247. 000	45, 537. 400	305. 000
Yamagata	10, 393. 539	84, 918. 398	730. 000
Akita	4, 440. 250	90, 696. 450	460. 000
Fukui	5, 453. 930	42, 746. 147	250. 000
Ishikawa	8, 863. 800	64, 593. 000	300. 000
Toyama	3, 129. 980	55, 377. 520	260. 000
Tottori	1, 935. 750	28, 462. 210	355. 885
Shimane	1, 729. 743	49, 551. 279	646. 059
Okayama	2, 297. 290	156, 084. 410	350. 000
Hiroshima	1, 347. 654	132, 487. 400	190. 000
Yamaguchi	7, 391. 000	81, 876. 562	400. 000
Wakayama	2, 429. 572	63, 122. 400	285. 000
Tokushima	2, 821. 000	85, 492. 160	3, 260. 000
Yehime	4, 364. 000	169, 861. 000	361. 000
Kōchi	2, 161. 168	95, 929. 960	270. 000
Fukuoka	3, 064. 000	121, 434. 000	250. 000
Oita	4, 590. 578	92, 037. 000	400. 000
Saga	1, 489. 000	49, 865. 000	300. 000
Kumamoto	3, 272. 700	120, 457. 300	350. 000
Kagoshima	1, 213. 250	101, 739. 860	426. 000
Okinawa	3, 700. 000	58, 652. 000	....
Sapporo	3, 037. 000	40, 251. 000	600. 000
Nemuro	2, 962. 000	6, 122. 000	500. 000
Total	186, 235. 509	4, 114, 979. 766	25. 986. 431

TABLE VI.—PART 7.—*Showing the estimated amount of local*

Name of fu or ken.	Industrial expenses.	Miscellaneous expenses for the kochō offices.	Expenses of collecting local taxes.	Expenses for building and repairs.
	yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*
Tōkiō	18. 000	31, 701. 000	....	4, 826. 971
Kiōto	175. 560	109, 872. 167	1, 565. 600	1, 250. 000
Ōsaka	1, 570. 754	118, 122. 926	650. 000	815. 994
Kanagawa	....	97, 113. 102	229. 600	34, 084. 840
Hiōgo	7, 321. 450	186, 852. 505	530. 000	1, 000. 000
Nagasaki	1, 957. 910	58, 766. 940	350. 000	929. 670
Niigata	19, 648. 050	157, 588. 700	1, 920. 000	4, 430. 740
Hakodate	3, 320. 000	22, 711. 000	500. 000	7, 659. 000
Saitama	2, 462. 075	99, 155. 000	304. 165	960. 000
Chiba	2, 772. 764	120, 752. 850	611. 000	2, 085. 500
Ibaraki	1, 385. 430	129, 318. 271	370. 000	709. 945
Gumba	4, 005. 340	52, 318. 674	180. 000	828. 297
Tochigi	1, 173. 800	73, 924, 837	866. 567	982. 862
Miye	6, 997. 563	125, 599. 516	2, 403. 000	491. 334
Aichi	4, 225. 320	167, 841. 000	396. 000	450. 000
Shidzuoka	3, 956. 980	158, 374. 244	329. 715	596. 877
Yamanashi	3, 496. 000	53, 804. 810	250. 000	700. 000
Shiga	4, 147. 484	89, 864. 591	772. 840	552. 138
Gifu	2, 705. 000	88, 065. 000	239. 000	500. 000
Nagano	5, 940. 900	98, 193. 714	400. 000	1, 593. 875
Miyagi	4, 044. 950	61, 367. 563	920. 000	1, 738. 041
Fukushima	3, 007. 800	102, 946. 000	700. 000	1, 709. 365
Iwate	13, 568. 175	74, 430. 900	250. 000	1, 046. 150
Aomori	6, 247. 000	45, 537. 400	305. 000	1, 298. 000
Yamagata	10, 393. 539	84, 918. 398	730. 000	1, 230. 000
Akita	4, 440. 250	90, 696. 450	460. 000	1, 396. 350
Fukui	5, 453. 930	42, 746. 147	250. 000	2, 306. 800
Ishikawa	8, 863. 800	64, 593. 000	300. 000	995. 200
Toyama	3, 129. 980	55, 377. 520	260. 000	1, 917. 000
Tottori	1, 935. 750	28, 462. 210	355. 885	872. 342
Shimane	1, 729. 743	49, 551. 279	646. 059	640. 000
Okayama	2, 297. 290	156, 084. 410	350. 000	1, 090. 000
Hiroshima	1, 347. 654	132, 487. 400	190. 000	480. 000
Yamaguchi	7, 391. 000	81, 876. 562	400. 000	798. 242
Wakayama	2, 429. 572	63, 122. 400	285. 000	488. 420
Tokushima	2, 821. 000	85, 492. 160	3, 260. 000	400. 000
Yehime	4, 364. 000	169, 861. 000	361. 000	433. 000
Kōchi	2, 161. 168	95, 929. 960	270. 000	566. 773
Fukuoka	3, 064. 000	121, 434. 000	250. 000	700. 000
Oita	4, 590. 578	92, 037. 000	400. 000	725. 100
Saga	1, 489. 000	49, 865. 000	300. 000	850. 000
Kumamoto	3, 272. 700	120, 457. 300	350. 000	1, 144. 800
Kagoshima	1, 213. 250	101, 739. 860	426. 000	580. 000
Okinawa	3, 700. 000	58, 652. 000	....	6, 660. 000
Sapporo	3, 037. 000	40, 251. 000	600. 000	11, 010. 000
Nemuro	2, 962. 000	6, 122. 000	500. 000	28, 568. 000
Total	186, 235. 509	4, 114, 979. 766	25. 986. 431	135, 091. 626

enses for the sixteenth year of Meiji (1883)—(Continued).

xpenses for penitentiaries.	Reserve fund.	Miscellaneous expenses.	Total.	Educational expenses per cent. of total expenses.
yen s.r.	*yen s.r.*	*yen s.r.*	*yen s.r.*	
215,381.399	14,350.655	17,064.000	1,291,616.319	.990
137,108.623	12,348.637	....	636,290.486	3.624
136,710.916	17,522.722	8,469.950	855,863.273	4.875
78,695.440	11,604.033	3,753.876	523,856.845	1.708
71,307.810	6,500.000	2,588.700	728,402.132	12.936
51,320.454	20,000.000	300.919	314,516.534	10.751
59,155.602	9,319.821	27,400.459	774,128.900	7.472
31,067.000	....	15,830.000	200,699.240	13.057
70,837.169	5,000.000	....	580,656.961	14.677
58,127.326	7,500.000	....	462,303.154	8.225
80,543.993	4,000.000	....	503,904.979	6.811
61,688.354	3,432.945	....	328,643.938	9.356
45,649.023	10,200.000	....	370,641.293	9.516
68,978.117	4,706.258	....	517,071.540	12.291
87,178.675	5,422.502	842.200	668,442.583	4.688
68,142.669	8,336.646	....	563,345.842	7.761
38,379.547	5,000.000	....	290,254.295	5.055
70,896.297	3,007.822	....	341,056.104	4.410
45,390.000	9,457.415	6,126.000	444,380.915	12.577
65,469.726	10,292.797	45,000 000	527,686.514	6.927
21,454.198	2,518.688	23,668.295	429,152.468	7.055
71,084.382	5,043.557	....	518,699.665	7.620
25,462.203	15,000.000	....	354,724.421	11.819
29,464.000	4,849.700	3,075.000	289,167.764	9.285
40,736.381	9,824.941	....	405,534.005	5.799
36,564.172	7,000.000	....	321,825.352	9.317
30,031.168	2,862.224	....	297,331.489	11.601
35,963.353	9,253.496	3,037.666	388,306.004	15.549
23,955.673	18,261.088	....	378,981,896	10.132
29,670.553	1,500.000	....	181,044,273	5.799
37,181.997	4,000.000	....	249,459.632	3.570
96,265.759	13,205.898	....	642,267.931	7.575
72,500.269	4,766.009	1,584.187	488,976.291	8.265
48,068.898	6,211.187	....	446,993.971	2.357
37,037.228	3,000.000	....	306,795.771	12.489
42,433.028	2,000.000	....	312,627.751	8.495
95,728.000	10,142.508	....	670,963.508	4.812
87,707.165	2,501.927	746.448	332,648.073	8.076
64,622.000	9,787.935	12,840.743	580,844.678	13.159
55,830.652	6,064.180	....	376,707.899	4.792
38,250.000	8,000.000	....	256,935.000	9.349
54,085.076	5,094.025	....	515,531.040	10.119
37,699.582	4,260.650	....	336,822.639	4.441
14,847.000	....	....	198,403.000	5.796
40,176.000	....	23,036.000	293,389.000	6.015
9,725.000	....	15,844.000	141,061.000	3.190
2,718.571.877	323,150.266	211,208.443	20,638,956.368	7.603

TABLE VI.—PART 8.—*Showing the sources of income for*

Name of fu or ken.	Local tax.	Fund from treasury.	Voluntary contributions.	Special fund.
	yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*
Tōkiō	891, 477. 219	400, 139. 100	...	...
Kiōto	560, 462. 729	75, 827. 757	...	...
Ōsaka	786, 042. 339	69, 820. 934	...	...
Kanagawa	456, 173. 842	67, 683. 008	...	...
Hiōgo	697, 673. 324	80, 728. 808	...	...
Nagasaki	299, 399. 204	15, 117. 330	...	...
Niigata	734, 513. 631	24, 425. 543	...	...
Hakodate	121, 984. 000	77, 762. 000	953. 240	...
Saitama	555, 203. 384	25, 453. 577	...	...
Chiba	438, 081. 289	23, 125. 031	...	...
Ibaraki	479, 008. 860	24, 896. 119	...	...
Gumba	314, 941. 507	13, 702. 431	...	...
Tochigi	358, 340. 840	12, 300. 453	...	...
Miye	497, 763. 268	19, 308. 272	...	...
Aichi	645, 708. 619	22, 733. 964	...	...
Shidzuoka	537, 671. 830	20, 599. 012	...	...
Yamanashi	280, 459. 987	9, 794. 308	...	...
Shiga	320, 283. 277	20, 772. 327	...	...
Gifu	427, 650. 377	16, 730. 538	...	...
Nagano	503, 455. 447	24, 231. 067	...	...
Miyagi	412, 173. 858	16, 915. 387	...	...
Fukushima	498, 508. 185	20, 191. 530	...	...
Iwate	339, 199. 842	15, 524. 579	...	...
Aomori	278, 141. 610	11, 026. 154	...	...
Yamagata	383, 653. 030	18, 965. 025	2, 915. 950	...
Akita	305, 589. 898	10, 606. 460	...	5, 628. 994
Fukui	282, 921. 309	14, 410. 180	...	...
Ishikawa	373, 253. 253	15, 052. 751	...	...
Toyama	367, 180. 946	11, 800. 950	...	...
Tottori	170, 577. 748	10, 466. 525	...	...
Shimane	237, 421. 339	12, 038. 293	...	...
Okayama	620, 580. 335	21, 687. 596	...	...
Hiroshima	465, 378. 760	17, 897. 531	5, 700. 000	...
Yamaguchi	381, 524. 739	21, 692. 482	43, 776. 750	...
Wakayama	293, 720, 609	10, 360. 162	2, 715. 000	...
Tokushima	282, 248. 152	14, 882. 643	...	...
Yehime	636, 278. 893	34, 684. 615	...	...
Kōchi	321, 618. 751	11, 029. 322	...	...
Fukuoka	559, 646. 447	21, 198. 231	...	...
Ōita	356, 140. 587	20, 567. 312	...	...
Saga	245, 335. 385	11, 599. 615	...	...
Kumamoto	460, 795. 903	54, 735. 137	...	...
Kagoshima	320, 406. 137	16, 416. 502	...	...
Okinawa	...	198, 403. 000	...	...
Sapporo	166, 326. 000	127, 063. 000	...	...
Nemuro	...	141, 061. 000	...	...
Total	18, 664, 916. 639	1, 875, 428. 056	56, 060. 940	5, 628. 994

local expenses for the sixteenth year of Meiji (1883).

Interest on educational fund.	Miscellaneous.	Total.	Compared with the previous year.	
			Increase.	Decrease.
yen s. r.	*yen s. r.*	*yen s. r.*	*yen s. r.*	*yen s. r.*
		1,291,616.319		40,048.512
		636,290.480		45,855.927
		855,863.273	2,345.285	
		523,856.845	14,108.219	
		728,402.132	3,371.976	
		314,516.534		
15,189.726		774,128.900		69,995.863
		200,699.240	27,229.740	
		580,656.961	53,470.856	
1,096.834		462,303.154		18,504.591
		503,994.979	[illegible],782.401	
		328,643.938		91,775.188
		370,641.293		2,883.949
		517,071.540		22,990.133
		668,442.583		33,196.265
	5,075.000	563,345.842		99,119.454
		290,254.295		10,036.403
		341,056.104		112,735.152
		444,380.915		15,159.480
		527,686.514		68,850.072
	63.223	429,152.468		3,159.080
		518,699.665	42,981.592	
		354,724.421		450.559
		289,167.764		30,807.499
		405,534.005		30,809.218
		321,825.352		31,647.634
		297,331.489	1,125.121	
		388,306.004		
		378,981.896		
		181,044.273	7,973.111	
		249,459.632		11,607.055
		642,267.931		22,392.827
		488,976.291		66,729.759
		446,993.971	88,673.971	
		306,795.771	15,648.853	
	15,496.956	312,627.751	204.532	
		670,963.508		42,769.386
		332,648.073	9,865.045	
		580,844.678	2,015.783	
		376,707.899		3,820.054
		256,935.000		
		515,531.040	2,379.680	
		336,822.639		
		198,403.000		18,349.000
		293,389.000	18,332.000	
		141,061.000	20,647.000	
16,286.560	20,635.179	20,638,956.868		

TABLE VI.—PART 9.—*Showing contributions and contributors to the public schools, kindergartens, &c., for the sixteenth year of Meiji (1883).*

Name of fu or ken.	Amount of money.	Ground.	Buildings.	Books.	Apparatus.	Appliances.	Value of miscellaneous articles.	Number of contributors.
	yen s.r.	(*a*)					*yen s.r.*	
Tōkio	5,668.914	....	1	161	46	156	12.360	2,875
Kiōto	28,489.151	183.00	....	1,885	1,183	1,500	97.640	7,995
Ōsaka	10,576.243	8,075.72	....	417	6,328	6,803	292.900	5,493
Kanagawa	3,684.184	2,250.00	1	143	51	190	115.650	1,617
Hiogo	16,870.281	493.40	4	67	89	312	55.738	5,827
Nagasaki	4,212.668	171.00	1	3,065	58	....	....	980
Niigata	103,280.550	2,086.37	5	133	29	288	456.895	43,619
Hakodate	2,645.110	604.00	....	32	3	1	34.000	844
Saitama	5,256.407	....	....	380	48	32	298.107	1,971
Chiba	21,796.375	161.00	5	187	59	344	48.400	5,216
Ibaraki	10,414.236	429.00	1	75	4	13	500	4,391
Gumba	19,444.087	10,724.00	....	51	16	193	26.750	3,426
Tochigi	17,711.815	19,604.00	4	116	132	219	168.900	4,083
Miye	20,430.129	1,519.00	1	109	25	255	188.428	9,583
Aichi	59,550.580	4,546.00	1	342	69	55	8.640	4,910
Shidzuoka	41,847.458	1,865.00	4	332	52	197	179.759	17,960
Yamanashi	17,392.800	519.00	....	194	189	397	10.900	5,112
Shiga	7,431.072	712.00	....	133	52	125	71.740	2,235
Gifu	15,416.880	7,763.00	....	39	38	77	70.090	17,891
Nagano	26,024.549	1,309.66	6	53	20	55	91.645	4,529
Miyagi	2,137.174	1,440.00	....	15	21	18	66.200	895
Fukushima	6,433.091	1,419.00	1	18	2	30	....	1,358
Iwate	19,071.793	794.00	1	16	18	....	....	7,195
Aomori	1,423.606	....	....	80	6	12	18.520	1,930
Yamagata	15,799.954	348.00	3	37	94	64	75.000	1,810
Akita	3,422.625	92.00	....	283	8	37	....	1,076
Fukui	5,858.640	128.00	1	51	50	41	1.600	1,384
Ishikawa	3,984.939	163.00	1	54	199	2	36.393	1,972
Toyama	2,041.819	175.00	....	23	....	....	....	268
Tottori	636.005	200.00	....	....	....	50	....	454
Shimane	4,339.017	24.00	....	100	4	113	7.500	1,400
Okayama	10,453.041	1,527.00	....	115	6	5	27.230	4,341
Hiroshima	4,736.713	945.00	1	87	423	70	10.570	2,870
Yamaguchi	22,366.238	....	....	95	1	158	4.150	9,403
Wakayama	4,532.409	296.00	1	5	....	15	45.000	1,236
Tokushima	6,631.333	3,056.00	1	27	20	....	....	1,659
Yehime	18,561.414	1,743.61	3	362	177	37	15.000	11,907
Kōchi	2,667.772	150.00	....	....	....	9	11.500	1,507
Fukuoka	7,935.415	....	1	130	1	20	22.990	5,594
Oita	1,839.988	....	....	1	1	....	....	1,272
Saga	6,047.600	....	....	14	9	50	9.500	618
Kumamoto	1,416.917	169.86	....	....	....	....	19.100	639
Miyazaki	937.300	....	....	11	....	....	2.500	92
Kagoshima	2,816.203	....	....	3	....	....	1.060	1,958
Okinawa	438.613	....	1	....	....	....	....	240
Sapporo	2,073.130	....	....	....	....	....	....	539
Nemuro	192.000	....	....	....	....	....	6.000	10
Total	596,938.238	75,985.62	49	9,441	9,531	11,943	2,608.855	258,184

a Unit in this column is tsubo. A tsubo equals 36 square feet.

CIRCULARS OF INFORMATION

OF THE

BUREAU OF EDUCATION.

No. 5—1885.

PHYSICAL TRAINING IN AMERICAN COLLEGES AND UNIVERSITIES.
BY EDWARD MUSSEY HARTWELL, PH.D., M.D.,
OF JOHNS HOPKINS UNIVERSITY.

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1886.

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LETTER.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., October 24, 1885.

SIR: In spite of the frequent reference among educators and in educational literature to the fact that all education should aim at producing a sound mind in a healthy body, it is well known that this important truth is too often forgotten by school officers, teachers, and parents. Generally in American rural schools, and too often in our city schools, the conditions requisite to health are ignored. Too frequently schoolhouses are unhealthy in their location, their surroundings, or internal arrangements.

Beyond the instruction in hygiene the main attempts to conserve health in the public schools have consisted in introducing German gymnastics, or in paying a more careful attention to the laws of heating and lighting and the supply of pure air and water. Sometimes the introduction of manual labor has been looked upon as the sure prevention of all disease; athletic sports have been tried; and recently more careful attention has been given to the whole subject, especially in connection with our colleges. The Ling system of gymnastics is received with increasing favor. More and more believe that the best physical training will not aim to make either acrobats or athletes, but to promote health of body and mind. The efforts of Prof. Edward Hitchcock at Amherst College and of Dr. D. A. Sargent at Harvard have been attended with most beneficial results, and serve to greatly increase the care of the health of college students.

The number of gymnasia of merit has greatly increased. Calls for a report upon this new development in physical training have been urgent and frequent. I have therefore employed E. M. Hartwell, M.D., Ph.D., to collect the information accessible and prepare a report upon the subject. His report is contained in the following pages, which are recommended for publication. If our colleges and universities can lead the way in devising and establishing the best hygienic training, their example will soon affect favorably all other grades of instruction.

I have the honor to be, very respectfully, your obedient servant,

JOHN EATON,
Commissioner.

The Hon. SECRETARY OF THE INTERIOR.

Publication authorized.

H. L. MULDROW,
Acting Secretary.

PHYSICAL TRAINING IN AMERICAN COLLEGES AND UNIVERSITIES.

IDEALS OF MANLY EXCELLENCE.

Philosophical speculations regarding the nature and future of man's body and soul underlie and determine all our schemes and endeavors for the nurture and training of youth. There appear to be four principal ideals of manly excellence, which, singly or in combination, have dominated the minds of the promoters and governors of educational foundations, and in accordance with which physical training has been favored, tolerated, neglected, or contemned. We may characterize these ideals broadly as the Greek or æsthetic, the monkish or ascetic, the military or knightly, and the medical or scientific.

The first three have been influential in varying degrees from very early times. The fourth, although compounded of ancient elements, is so strongly tinged with utilitarian and psycho-physical ideas that it is best described as modern. All of these ideals are traceable to conceptions of human nature and destiny which may be roughly classed under the two heads of lugubrious and cheerful.

THE GREEK IDEAL.

The Greek ideal, it is needless to say, was not lugubrious. "Everything that is good," says Plato in the "Timæus," "is fair, and the fair is not without measure, and the animal who is fair may be supposed to have measure. Now we perceive lesser symmetries and comprehend them, but about the highest and greatest we have no understanding; for there is no symmetry greater than that of the soul to the body. This, however, we do not perceive, nor do we allow ourselves to reflect that when a weaker or lesser frame is the vehicle of a great and mighty soul, or, conversely, when a little soul is encased in a large body, then the whole animal is not fair, for it is defective in the most important of all symmetries; but the fair mind in the fair body will be the fairest and loveliest of all sights to him who has the seeing eye."

Well might Charles Kingsley say of the Greeks, "To produce health, that is, harmony and sympathy and grace, in every faculty of mind and body, was their notion of education."

The antithesis between the Greek and the ascetic ideals is clearly indicated in a remark of Apuleius concerning Egyptian and Greek modes of worship. "The Egyptian deities," he says, "were chiefly honored by lamentations, and the Greek divinities by dances."

THE MONKISH IDEAL.

The ideal of the monk, which, after the first few centuries of the Christian Church, exercised such a profound influence upon European thought and life, was of Asiatic and, to a considerable extent, of Egyptian origin. "The duty of a monk," said St. Jerome, "is not to teach, but to weep." Weeping and self-torture might well absorb the energies of men who conceived that all flesh was the creation of Satan, and championed the belief that soul and body are independent and mutually antagonistic entities.

When it was held that "the greatest of all evils was pleasure, because by it the soul is nailed or riveted to the body," and that mental and spiritual health were best subserved by bodily weakness, we cannot wonder that "a hideous, sordid, and emaciated maniac," to borrow the words of Lecky, "without knowledge, without patriotism, without natural affection, passing his life in a long routine of useless and atrocious self-torture, and quailing before the ghastly phantoms of his delirious brain, became the ideal of the nations which had known the writings of Plato and Cicero and the lives of Socrates and Cato."

Such views as these, although they were treated as heretical by the earlier Fathers of the Christian Church, became accepted dogmas of the Church of Rome in the Middle Ages; and one may hear similar doctrines far from faintly echoed, if he will attend to the sermons of many of the Scotch, English, and American divines who have within the last three centuries striven to establish or perpetuate religious terrorism.

THE MILITARY IDEAL.

The military ideal of manliness, now existing side by side with the monkish ideal, now confronting and challenging it, has played a most important and conspicuous part in the education of the sons of noblemen and of gentlefolk. Herodotus tells us that the sons of the Persians, from their fifth year to their twentieth, were carefully taught three things only,—to ride, to draw the bow, and to speak the truth. Physical training was predominant in the education of free-born youth among the Spartans, Romans, and ancient Germans: it consisted chiefly of martial exercises and the chase, and its aim was the formation of an agile and enduring soldiery. "Playing at all weapons" formed a necessary part of every gentleman's education in Britain as well as on the Continent, even later than the sixteenth century.

"I swear I'd rather that my son should hang than learn letters. For it becomes the sons of gentlemen to blow a horn nicely, to hunt skill-fully, and elegantly carry and train a hawk. But the study of letters should be left to the sons of rustics." These are the words of an English gentleman, of the time of Henry VIII, who, on hearing letters praised, "was roused to sudden anger and burst out furiously."

The ideal of the Greeks sprang from a passion for beauty and harmony, and a joyous sense of well-being; that of the theologian and the monk was conditioned on and determined by a profound ignorance of, and a bitter contempt for, the body; while that of the soldier and the knight owed its peculiar features to a rude appreciation of bodily force and skill, gained from experience in camp and field.

THE MODERN IDEAL.

It is not to the generative vigor of any or all of these ideals that we owe our modern doctrine of the interdependence of body and mind; which doctrine is but vaguely, if at all, apprehended by the majority of those who quote with generous unction the time-worn *mens sana in corpore sano* line of Juvenal, who exhorts men not only to "pray for a healthy mind in a healthy body," but also to "ask for a brave soul unscared by death." No: the belief "that to work the mind is also to work a number of the bodily organs; that not a feeling can arise, not a thought pass, without a set of concurring bodily processes," is the child of the scientific spirit embodied in the new physiology and the new psychology, and was engendered, as we know, through the labors of Harvey and Haller, Du Bois-Reymond, Müller, and Weber, Helmholtz and Wundt.

Mr. Huxley, it may be fairly said, voices the views of a large and increasing number of scientific thinkers when he says:

> That man, I think, has had a liberal education who has been so trained in youth that his body is the ready servant of his will, and does with ease and pleasure all the work it is capable of; whose intellect is a clear, cold logic engine, with all its parts of equal strength and in smooth working order, ready, like a steam-engine, to be turned to any work, and spin the gossamers as well as forge the anchors of the mind; whose mind is stored with a knowledge of the great and fundamental truths of Nature and of the laws of her operations; one who, no stunted ascetic, is full of life and fire, but whose passions are trained to come to heel by a vigorous will, the servant of a tender conscience; who has learned to love all beauty, whether of nature or of art, to hate all vileness, and to respect others as himself.

SYSTEMS OF PHYSICAL TRAINING.

It would be interesting, did the scope and limits of this paper permit it, to discuss fully and in detail the means adopted, at different times and in various countries, to realize the ideals of which we have spoken. Some statements of a suggestive rather than of a descriptive nature must suffice.

THE GREEK SYSTEM.

In Guhl and Koner's "The Life of the Greeks and Romans" we find the gymnasia mentioned first among the public buildings of Greece because they were "center-points of Greek life." The authors go on to say:

> Games and competitions in various kinds of bodily skill formed a chief feature of their religious festivals. This circumstance reacted on both sculpture and architecture, in supplying the former with models of ideal beauty, and in setting the task to the latter of providing suitable places for these games to be celebrated.

THE PALÆSTRA.

> For purposes of this kind, as far as public exhibition was not concerned, the palæstræ and gymnasia served. In earlier times these two must be distinguished. In the palæstra young men practiced wrestling and boxing. As these arts were gradually developed, larger establishments, with separate compartments, became necessary. Originally such places were kept by private persons; sometimes they consisted only of open spaces, near a brook, if possible, and surrounded by trees.

THE GYMNASIUM.

> Soon, however, regular buildings, gymnasia, became necessary. At first they consisted of an uncovered court surrounded by colonnades, adjoining which lay covered spaces, the former being used for running and jumping, the latter for wrestling. In the same degree as these exercises became more developed and as grown-up men began to take an interest in these youthful sports, these institutions grew in size and splendor.
>
> Minute descriptions of these establishments by Greek authors we do not possess, but the important parts are known to us from occasional remarks, particularly in the Platonic dialogues. There we find mentioned the *ephebeion*, where the youth used to practice; further, the bath, to which belonged a dry sweating bath for the use of both wrestlers and visitors. The *apoduterion* was the room for undressing. In another room, the *elaiothesion*, the oil was kept for rubbing the wrestlers, and there possibly this rubbing itself took place. In the *konisterion* the wrestlers were sprinkled with sand, so as to give them a firmer hold on each other. The *sphairisterion* was destined for games of ball, while other passages, open or covered (collectively called *dromos*), were used for practice in running, or simply for walking. A particular kind of covered passage were the *xustoi*, which had raised platforms on both sides for the walkers, the lower space between being used by the wrestlers.
>
> Among the Doric tribes, but chiefly in Sparta, physical education consisted principally in hardening the body of the young citizen-warrior against the influence of pain and exertion; among the Ionian tribes, and chiefly at Athens, the harmonious development of body and soul, *i. e.*, grace and ease of bearing and demeanor, were the objects chiefly aimed at. At Athens the gymnasia were public institutions, supported by public or private means, at which *epheboi* (youths old enough for military service) and men spent a part of their day in athletic exercise and in instructive and social intercourse. These were the *Lukeion*, the *Kunosarges*, the *Akademia*, the *Ptolemaion*, the splendid gymnasium of Hadrianus, and the small gymnasium of Hermes. The number of palæstræ at Athens was still greater. They were all private institutes kept by single *paidotribai*, and destined for the athletic education of boys only. In smaller cities the joint practice of youths and grown-up men in the same locality was frequently inevitable. But it is erroneous to suppose that the palæstra was exclusively the resort of the *athletai*. The separation of youths and men from the boys was desirable, both for moral and educational reasons; for the difficulties of the task increased in proportion to the of the

THE GAMES.

Before entering upon the single exercises we must try to define the three general appellations, *gymnastic*, *agonistic*, and *athletic*. The first term comprises all kinds of regulated bodily exercise for the purpose of strengthening the body or single limbs. The *agonistic* comprises the gymnastic exercises tending to prepare the *athletai* for the wrestling matches, which formed an important feature of the national festivities, particularly of the games of Olympia. Here assembled, invited by the peace messengers of Zeus, the delegates of empires and cities, not to speak of crowds of enthusiastic spectators from the most distant shores. The flower of Greek youth came up to test their skill in the noble competition for the crown of Zeus. Only he whose untainted character and pure Hellenic descent had been certified was allowed to approach the silver urn which contained the lots. A previous training of at least ten months at a Greek gymnasium was further required for obtaining the permission of taking part in the holy contest.

The ethic purpose of gymnastic art came to be more neglected, when artificiality and affectation began to prevail. It was then that the noble art deteriorated into a mechanical profession; the *athletic* is the later signification of the term.

THE TEACHERS.

The teachers of gymnastics among the Athenians were known as *gumnastai* and *paidotribai;* the former having to superintend the general development and training of the body, while the latter directed the single exercises. The *sophronistai* were responsible for the good behavior of the boys. The whole gymnasium and all its teachers were under the charge of a superintendent, termed the *gumnasiarchos*. His position was highly honorable and responsible. The principal exercises taught in the palæstra and the gymnasium were running, leaping, wrestling, throwing the discus, throwing the spear, boxing, and the *pagkration*, a combination of boxing and wrestling. Various ball games were also in vogue, and much attention was given to bathing.

It resulted from the best Greek training that Sparta needed no walls of defense save the bodies of her sons, and that Athens furnished models of manly vigor and beauty which have been alike the admiration and despair of sculptors since the days of Phidias.

SYSTEMS OF THE MIDDLE AGES.

In comparison with the comprehensive and well directed methods of the Greeks, the means employed for the bodily training of the would-be priest or soldier seem crude and primitive in the extreme. In the better days of monachism it was held that a laboring monk had but one devil to fear, while one who had idle hands must needs contend against a legion. Accordingly labor in the field, the garden, and the vineyard became a well recognized factor in the course of training laid down for many of the religious orders, and especially of the Benedictines, the champions and saviors of classical learning in the west. Although the ghostly enemies of the young gentleman, or noble, were far from being ignored, yet his training was mainly directed toward rendering him fit to encounter savage beasts and men-at-arms. The exercises and pastimes of the tilt-yard, the village-green, and the bear-pit, differed widely indeed from the exercises of the palæstra, the gymnasium, and the stadium, though not so widely as from the feats achieved by scholastic and religious youth with mattock, spade, and pruning-hook.

BRITISH USAGES.

In view of the kinship of American and British schools and scholars, our purpose will be best served if, in the present connection, we confine our attention chiefly to British usages as regards scholastic and knightly training in mediæval and early modern times.

MEDIÆVAL STUDENT-LIFE.

Asceticism [says Mullinger, the historian of the University of Cambridge, in his chapter on mediæval student-life], as it was then the professed rule of life with the monk, the friar, and the secular, was also the prevailing theory in the discipline of those whom they taught and trained for their several professions. The man fasted, voluntarily bared his back to the scourge, kept long and painful vigils; the boy was starved, flogged, and sent to seek repose where he might find it if he were able. * * * Lever, the master of St. John's, in an oft-quoted passage, describes the scholars of his college, then (in 1550) the poorest in proportion to its number in the whole University, as going to dinner at ten o'clock, content with a penny piece of beef, among four, having a little "porage" made of the broth of the same beef, with salt and oatmeal, "and nothing else." After this slender dinner, he continues, "they be either teaching or learning until five of the clock in the evening, when they have a supper not much better than their dinner. Immediately after the which they go either to reasoning in problems or unto some other study, until it be nine or ten of the clock, and then, being without fire, are fain to walk or run up and down half an hour to get a heat in their feet when they go to bed."

SPORTS AND PASTIMES.

Of the sports and pastimes of those days we have little record; but we know the use of the cross-bow to have been a favorite accomplishment; cock-fighting, that "last infirmity" of the good Ascham, was also a common amusement; while, from certain college statutes requiring that "no fierce birds" should be introduced within the precincts of the college, we may infer that many of the students were emulous of the falconer's art. It is not uninteresting to note that a custom of the present day, the daily walk with a single companion, was originally inculcated by college statute, while this in turn is said to have derived its precedent from apostolic example.

The statute referred to, dates from the year 1336, which was a little more than sixty years before the founding of Winchester College by William of Wykeham, who strenuously and particularly forbade—in the statutes which he drew up for the government of his scholars—pretty much every kind of sport, whether it were gentlemanly or loutish.

TRAINING UNDER HENRY VIII.

From the letters of young Gregory Cromwell's tutor to his pupil's father, the Earl of Essex and the King's chief secretary, we derive some insight as to the education of a young nobleman of the time of Henry VIII, at which time it was said that "gentlemen strive more to bring up good hounds than wise heirs." It appears from the letters alluded to that young Cromwell had "hours limited for the French tongue, writing, playing at weapons, casting of accounts, pastimes of instruments," and that for his recreation he used "to hawk and hunt and shoot in his long bow."

Henry VIII strove to foster the practice of martial exercises throughout the realm. We are told of his "continuing daily to amuse himself in archery, casting of the bar, wrestling, or dancing, and frequently in tilting, tourneying, fighting at the barriers with swords and battle-axes, and such like martial recreations, in most of which there were very few who could excel him."

LAWS REGARDING ARCHERY.

He caused Parliament to enact, in 1511, that "every man being the King's subject, not lame, decrepit, or maimed; being within the age of sixty years, except spiritual men, justices of the one bench and of the other, justices of the assize, and barons of the exchequer, do use and exercise shooting in long bows, and also do have a bow and arrows ready continually in his house, to use himself in shooting; and that every man having a man child or men children in his house shall provide for all such, being of the age of seven years and above, a bow and two shafts, to learn them and bring them up in shooting." Each village was, in 1541, required to maintain a pair of archery butts. It would seem that this statute was held to apply to school-boys and collegians; for, while it is provided in the ordinances of Shrewsbury school, made by the authorities of the town in 1578, that the "schollers shall plaie upon thursdaies onles there be a holidaye in the weeke and no day els but the thursdaie," it is prescribed that the "schollers plaie shal be shootinge in the long bowe and chesse plaie and no other games except it be runninge, wrastlinge, or leapinge." It is also noteworthy that certain playgrounds, at Eton and Harrow respectively, are still termed "The Shooting Fields" and "The Butts."

It is not safe, however, to infer from enactments like the above that systematic physical training, even in the single particular of archery, was ever generally enforced in English schools and colleges. System and compulsion in such matters have ever been contemned both by teachers and pupils.

Roger Ascham, in his "Toxophilus, the Schole of Shootinge," published in 1545, declares that "if shooting could speak, she would accuse England of unkindness and slothfulness," and further states that "very many play with the King's acts, * * * many buy bows, because of the act, but yet shoot not."

VIEWS OF CARDINAL POLE.

Very few men in England, during the middle third of the sixteenth century, were so well qualified to set forth and criticise the educational methods of his time as Reginald Pole, legate under Pope Paul III, archbishop of Canterbury in the time of Queen Mary, and chancellor both of Oxford and Cambridge. Pole, who had been educated at the Universities of Oxford, Paris, and Padua, and was on familiar terms with the most renowned scholars of his day, was a man of eminent ability and great independence of character. There can be little doubt that in "England in the Reign of Henry VIII. A Dialogue between Cardinal Pole and Thomas Lupset, Lecturer in Rhetoric in Oxford. By Thomas Starkey, Chaplain to the King," the opinions of Pole regarding the educational needs of England are set forth with substantial accuracy.

Pole favors the opinion of those who say that "the weal of man resteth not only in the mind and the virtues thereof, but in the body also, and in the prosperous state of the same," as being "very truth."

"First and most principal of all ill customs used in our country is that which toucheth the education of the nobility," says Pole, "whom we see customably brought up in hunting and hawking, dicing and carding, eating and drinking, and in all vain pleasure, pastime, and vanity." Pole is equally severe on the education of the "men of the church," who he declares "are not brought up in virtue and learning, as they should be, nor well approved therein before they be admitted to such high dignity, * * * for commonly you shall find that they can nothing do but patter up their matins and mass, mumbling up a certain number of words nothing understood."

ON COMPULSORY EDUCATION OF THE NOBILITY.

Pole distinctly favors compulsory education and public schools, in order to remedy the "ill customs" noted above, as may be seen from the following quotation:

> But here is, Master Lupset, not only in our country, but also in all other which ever yet I knew, a great lack and negligence of them which rule in common policy, and that is this: that in no country there is any regard of the bringing up of the youth in common discipline and public exercise. But every man privately in his own house hath his master to instruct his children in letters, without any respect of other exercise in other feats pertaining to nobility no less than learning and letters, as in all feats of chivalry. Therefore there would some ordinance be devised for the joining of these both together, which might be done after this manner, likewise as we have in our universities, colleges, and common places to nourish the children of poor men in letters; whereby, as you see, cometh no small profit to the common weal.
>
> So much more we should have, as it were, certain places appointed for the bringing up together of the nobility, to the which I would the nobles should be compelled to set forward their children and heirs, that in a number together they might the better profit. And to this company I would have appointed rulers certain of the most virtuous and wise men of the realm, the which should instruct this youth to whom should come the governance after, of this our common weal. Here they should be instruct, not only in learning and virtue, but also in all feats of war pertaining to such as should be hereafter in time of war captains and governors of the common sort. This should be the most noble institution that ever was yet devised in any common

weal. Of this should spring the fountain of all civility and politic rule; yea, and without such a thing I can not tell whether all the rest of our device will little avail. I think it will never be possible to institute our common weal without this ordinance brought to pass and put into effect.

Pole's ideas, we need hardly say, were too novel and theoretical to be adopted in his day; and it would be extremely difficult to realize them in England even in our day. Milton and Bacon, Fuller and Locke, and Herbert Spencer, have all argued in favor of physical training, in a strain more or less similar to that of Pole. But the realization of their generous theories has never been widely and systematically undertaken by the teachers of British youth.

Athletic sports, such as boating, cricket, and foot-ball, have come to be highly prized and lauded. We are far from denying their great educational value, but it is clear that they owe their essential features chiefly to the beliefs and customs of that most uncritical and prejudiced class of conservatives, the British undergraduate, rather than to the schemes and endeavors of innovating thinkers and reformers. It is equally clear that innovators and dreamers have been largely influential in quickening and determining the development of modern methods, both of physical and mental training, on the Continent of Europe. As we shall have occasion to point out further on, physical training in America owes more to German than to British models.

AMERICAN IDEAS AND CUSTOMS.

When we recall the fact that our oldest American colleges, like their early English models, were established primarily to recruit with learned men the ranks of the clergy, there is left no ground for wonder that physical training has so slowly won its way to recognition as a necessary part of a sound education. American educators were long ruled by British notions as to curriculum and discipline; the American public was mainly animated by narrowly "practical" and utilitarian ideals; and American collegians, who were not too serious to play at all, disported themselves after inherited British fashions in their intervals of study.

HARVARD AND DARTMOUTH CUSTOMS.

The means afforded students for recreation a hundred and fifty years ago were decidedly scanty, if we may judge from the only mention of them in the "Ancient Customs of Harvard College, Established by the Government of It." "Custom 16" runs as follows: "The Freshmen shall furnish bats, balls, and foot-balls for the use of students, to be kept in the buttery." Dartmouth College, in New Hampshire, was founded in 1769. In a statement made two years later by its first president, Rev. Dr. Wheelock, concerning its aims and methods, we find a recommendation, on which the changes were rung by college officers and trustees for more than fifty years in the east, and whose echoes are still ringing in the west. President Wheelock recommended the students to "turn the course of their diversions and exercises for their health to the practice of some manual arts, or cultivation of gardens and other lands, at the proper hours of leisure and intermissions from study and vacancies [vacations]".

VIEWS OF DR. RUSH.

Dr. Benjamin Rush, of Philadelphia, who was a signer of the Declaration of Independence, was long the foremost teacher in the foremost American medical college of his day, that of the University of Pennsylvania. Dr. Oliver Wendell Holmes inclines to believe that Dr. Rush not only gave direction to the medical mind of the country more than any other one man, but that he "typifies it better than any other." Dr. Rush urged his students "to turn nature out of doors and appeal to art," and published abroad his belief that "the time must and would come when the general use of calomel, jalap, and the lancet should be considered among the most essential articles of knowledge and the rights of man." One has but to turn to Dr. Rush's "Essays, Literary, Moral, and Philosophical", to find that his notions as to artificial and heroic practice were not confined to medical matters. Among these essays is one published in 1790, on the "Amusements and Punishments Proper for Schools." Dr. Rush voiced the prevailing sentiment of his time, and of many of our time as well, in proposing that "the amusements of our youth shall consist of such exercises as will be most subservient to their future employments in life." He favors agricultural and mechanical employments as means of diversion and training, and notes with approval that "in the Methodist College, in Maryland, a large lot is divided between the scholars, and premiums adjudged to those who produce the most vegetables from their grounds, or who keep them in the best order." "The Methodists," he adds, "have wisely banished every species of play from their college." Again he says:

> All the amusements of the children of the Moravians at Bethlehem, Penn., are derived from their performing the subordinate parts of several of the mechanical arts; and a considerable portion of the wealth of that worthy and happy society is the product of the labor of their little hands.

MANUAL LABOR SCHOOLS AND TRAINING.

It was in accordance with such notions as those of President Wheelock and Dr. Rush that farm, manual labor, and Fellenberg schools were founded, and societies for promoting manual labor in literary institutions were organized somewhat extensively in the United States during the first third of the present century.

In South Carolina.

The first of these farm-schools was that established in 1797 at Lethe, in Abbeville District, S. C., in accordance with the terms of the will of Dr. John de la Howe, a native of Hanover, in Germany, who left the bulk of his estate, comprising a farm of 500 acres and 1,000 acres of forest, for the educating, boarding, and clothing of twelve poor boys and twelve poor girls of Abbeville District. The school did not go into actual operation till twenty years later.

In Massachusetts.

When Amherst College was founded at Amherst, Mass., in 1821, it possessed at the start "an advantage over all other colleges," according to the Boston *Recorder* published in September of that year, which notes the purchase of "a large field for the express purpose of affording each charity student an opportunity of cultivating a quarter or half acre in that manner which his taste and judgment should dictate." While preparing this paper we have been assured that "ecclesiastical students find plenty of recreation and amusement, either walking, working in flower gardens, or riding."

Tyler's "History of Amherst College" states that "all the earlier terraces on College Hill were the work of the officers and students of Amherst College. And every spring, for many years, the students were in the habit of devoting one day to raking off the chips and clearing up the grounds." "Chip-day" at Amherst, it is to be remembered, was probably imported from Williams College, whence came Amherst's first president and students. At Williams College, years before and for years after the foundation of Amherst, the students had, in addition to a "chip-day," a "mountain-day" and a "gravel-day," the former being devoted to tramping, and the latter to regraveling the college walks. The Faculty granted these holidays for the purpose of "fostering in the students the habits of physical labor and exercise so essential to vigorous mental exertion."

GERMAN CUSTOMS AND THEIR INFLUENCE.

Prior to 1825, physical training, in its proper sense, had no recognition or standing in the curriculum of school or college, if we except the United States Military Academy at West Point, and one or two institutions modeled on it. The germ of such physical training as exists at present in many of our colleges came from abroad, and was planted by German exiles in New England soil.

Among the ancient Germans, bodily exercises were generally and strenuously cultivated for the sake of training men for war, the chase, and the sacred games. In the Middle Ages, bodily training was restricted to military gymnastics, and these were largely monopolized by the feudal aristocracy, none but knights being allowed to take part in the tournaments, whose origin is attributed to the German King, Henry I. The opposition of the Church and the introduction of firearms finally brought about the downfall of the chivalric games.

VIEWS OF THE REFORMERS.

Although the reformers, Luther, Melancthon, and Zwingli, urged the revival of gymnastics as a part of the education of all classes of youth, it was not until the last decades of the last century that any considerable attempt was made to systematize and enforce gymnastic training in Germany.

THE PHILANTHROPISTS.

The philanthropists, who, as regards the physical side of education, were the precursors of Jahn, the father of German Turning, made such an attempt in the reformed courses of instruction, by means of which they strove to supplant the "old education" and follow "the method of nature." Basedow, Campe, Salzmann, Guts Muths, Pestalozzi, and Fellenberg, all gave physical training a prominent place in the schools which they instituted or controlled. In so doing, however, they were only following, and that for the most part consciously, the suggestions contained in Rousseau's Émile, which was published in 1762, and contained much that seems but an echo from the essays of Montaigne, "On the Education of Children" and "On Pedantry," which appeared some eighty years before the Émile. Rousseau's main thesis is found in his claim that his "system is nature's course of development," and that "the great secret of education is to manage it so that the training of the mind and body shall serve to assist each other."

BASEDOW AND THE PHILANTHROPINUM.

Basedow, who was born at Hamburg in 1723 and was by nature an innovator, first attracted attention by his controversial writings on theological subjects. He was incited to devote himself to educational reforms by reading Émile, which a recent writer characterizes as "perhaps the most influential book ever written on the subject of education." In 1774, Basedow founded at Dessau his famous school, the Philanthropinum, "in which," says Von Raumer, "the views of Rousseau were strictly followed, and where these views were by every means sought to be introduced into actual life." Basedow's division of the day was as follows: eight hours for sleep; eight hours for food and amusement; and, for the children of the rich, six hours for school work and two for manual labor, while the children of the poor were to have two hours of school work and six of manual labor. His pupils in the Philanthropinum were taught wrestling, running, riding, dancing, besides carpentry and wood-turning, and were regularly taken on long walks into the country. They were also instructed as to the structure and functions of the human body by the private physician of Prince Dietrich, Basedow's patron. With Basedow philanthropy was indeed a passion to the last. With his dying breath he said, "I wish my body to be dissected for the good of my fellow-creatures."

It is noteworthy that Basedow and his immediate disciples and imitators employed both gymnastic and industrial exercises in their efforts to secure physical ning to their pupils.

Fellenber in Hofwyl, near Berne, in Switzerland, added mi in gymnastics and handicrafts.

GUTS MUTHS.

The influence of the Greek ideal is clearly traceable in the writings of Montaigne, Rousseau, Basedow, Guts Muths, and Jahn. "In the year 1785," says Guts Muths, "I entered, when still a youth, the school of Schnepfenthal, near Gotha, and thereupon Salzmann, its head, conducted me to a place saying, 'Here are our gymnastics; within this little space we amuse ourselves daily with five exercises, though they are still only in their rudiments.' These exercises had been first tried at Dessau where Salzmann had previously been. He soon intrusted me with the direction of this first beginning of exercises. All that I found out from ancient usages, from the historical remains of earlier and later antiquity, all that reflection and sometimes chance offered to me, was brought forward for the sake of amusing experiments. Thus the chief exercises increased, were subdivided into new forms and tasks, and were subjected to rules often laid down with great difficulty. Thus originated, after seven years' experiments, in the first edition of my 'Gymnastics for the Young' (1793), my first attempt to call attention to a subject that had been quite forgotten and only existed in history." Under Rector Vieth, at Dessau, gymnastics gained great popularity during the very time that Guts Muths was experimenting at Schnepfenthal. Guts Muths' efforts met with hearty recognition in Germany. Nachtigall in Denmark, and Ling in Sweden, made systematic gymnastics popular and general among their countrymen. To Ling was due the development of the system of medical gymnastics known as the Swedish Movement Cure, and also a system of general bodily training still much prized in Sweden and Norway.

JAHN AND THE TURNERS.

The extraordinary progress made by gymnastics in Germany during the first quarter of the present century was mainly due to the quickening and organizing genius of Friedrich Ludwig Jahn, known to all German Turners as "Father Jahn." "His idea," says Schaible in his "Essay on the Systematic Training of the Body,"

> was to unite the people of Germany into one nation, intellectually, morally, and physically strong against the threatening enemy of the west. Boldly and vigorously, a real reformer, he advanced toward his high ideal, the realization of which was attained with a surprising rapidity, notwithstanding the many impediments that stood in his way. The number of his pupils increased daily. His ideas of a revived national education were in this work ["Deutsche Turnkunst"] offered to the nation, and were enthusiastically received. Soon gymnastics took a national character. Boys, youths, and men of all classes of society took part in the exercises, and gymnasia sprang up in all parts. Nor was it long before from their gymnasia [in 1813] thousands of Turners of all ages rushed forth on a given signal as volunteers to the unfurled standard of their Fatherland, to prove, in a deadly struggle for freedom and country, the strength and self-reliance which they had acquired in the gymnasium.
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> After the German war of independence the effect of gymnastic training was fully

recognized. On their return from the battle-fields the gymnasts went again to their work with vigorous zeal. Gymnastics had gained a considerable importance through the valor and endurance shown by the Turners during the war. Gymnasia were established throughout Germany, from the primary school to the university [*sic*].

In the troublous times that followed the war of independence, Jahn and the Turners were denounced as liberals and enemies to the state, and in 1819 the gymnasia throughout Prussia, and in all Germany with the exception of Würtemberg, were closed. Jahn was thrown into prison and kept there until 1825. He lived to see gymnastics introduced into the schools in 1842, and Turners' societies flourishing all over Germany. He died in 1852 at the age of seventy-four.

Gymnastics for the sake of securing a symmetrical development of the bodily powers were not introduced into America before 1825. Military drill was up to that time employed in only a few institutions, and in them mostly for professional purposes. Educators in the United States, so far as they made any effort to provide for physical training, did so mainly with the view of providing an outlet for what were then termed "animal spirits," or for the purpose of decreasing the cost of an education by such means as had been advocated by President Wheelock and Dr. Rush.

FELLENBERG AND THE HOFWYL SCHOOLS.

The attempts of Pestalozzi and Fellenberg to unite industrial and intellectual training excited much more interest than did their efforts to bring about the harmonious development of every human faculty.

Pestalozzi's attempts at Neuhof, Stanz, and Yverdun, in the period from 1780 to 1809, were practical failures. What he was unable to accomplish was largely realized by Fellenberg and his successors at his schools in Hofwyl, near Berne, in the years 1807–'48. The Hofwyl establishment, to which Fellenberg devoted his time and fortune, included the literary institution, which dated from 1807, the agricultural or poor school, begun in 1808, the normal school, established a little later, and the intermediate or practical institution, which was started in 1827. Fellenberg's ideas on physical education are of especial interest, since they are so much more liberal and enlightened than those of the majority of his American imitators. The Hofwyl schools were organized and managed in accordance with the ideas expressed in the following extract from Fellenberg's writings:

> Pure air, a suitable diet, regular exercise and repose, and a proper distribution of time, are the principal means of physical education. It is as essential that a pupil leave his studies during the time appropriated to relaxation, as that he study during the hours devoted to that purpose. Voluntary exercise is to be encouraged by providing suitable games, by affording opportunities for gardening, and by excursions and bathing. Regular gymnastic exercises should be insisted on as a means of developing the body; a healthy action of the bodily frame has an important influence on both mind and morals. Music is to be considered as a branch of physical education having powerful moral influences. The succession of study, labor, musical instruction, and play, should be carefully attended to. The hours of sleep should be regulated by the age of the pupil.

At Hofwyl the gymnasium was a high-ceiled room, 100 feet long and 50 feet wide, with a floor of earth. It was well furnished with apparatus. Besides fencing and dancing, military drill was taught. Riding-horses, saddlery and carpentry shops, gardens, and a swimming pool, were provided for the scholars' use.

INTRODUCTION OF GYMNASTICS INTO AMERICA.

FELLENBERG SCHOOLS IN AMERICA.

Fellenberg's demonstration of the fact that "a poor boy, taken in his ninth year and staying till his eighteenth year was completed, paid by his labor during the last half for the expenses of maintaining him over his earnings during the first half," seems to have made a deep impression on "practical educators" in the United States sixty years ago. In Volume XV of *Barnard's Journal of Education* the following statement occurs:

> The Gardiner Lyceum in Maine was established in 1823, for instruction in the scientific principles of mechanics and agriculture, and in 1824 a Fellenberg school was opened at Windsor, Conn., by Messrs. Stebbins & Sill. But the desire to afford means by which poor students might defray the expenses of their education while at the same time pursuing their studies, was more influential than any other motive in the introduction of the manual labor system. The first institution founded upon this system was the Maine Wesleyan Seminary, planned in 1820 by Elihu Robinson of Augusta, Me., and put into operation in the spring of 1825. The Oneida Institute of Science and Industry was founded at Whitesboro', N. Y., in 1825–'26, and became one of the most successful manual labor schools in the country. In 1826 was also formed the Andover Mechanical Association at Andover Theological Seminary, Massachusetts, solely for the purpose of invigorating and preserving health, without any reference to pecuniary profit; but the success of the system of mechanical labor instituted by them made it a model which was followed in many similar institutions. Theological seminaries, colleges, and minor schools, in almost every State of the Union, were established with manual labor as an essential principle in their constitution.

In 1831 the Society for Promoting Manual Labor in Literary Institutions was formed in New York City, "for the purpose of collecting and diffusing information calculated to promote the establishment and prosperity of manual labor schools and seminaries in the United States, and for introducing the system of manual labor into institutions now established, without diminishing the standard of literary and scientific attainment." Theodore D. Weld was the general agent of the society, of which Zecariah Lewis was president. Mr. Weld made a report based on an extended tour among the "leading literary institutions in Ohio, Indiana, Illinois, Kentucky, Missouri, Tennessee, and Alabama." After his report was published the society ceased to labor for the accomplishment of its objects. The manual labor of which the mass of college students are capable is far too rude to afford profitable educational or pecuniary results, and far too onerous to be attractive for its gamesomeness. Students so poverty-stricken as to resort to the menial drudgery of scullions and waiters and field-hands may be commended for their pluck and assiduity, but it is time that a protest was entered against such practices except in cases of the direst necessity. The spectacle of college students seeking tips and drink-money is not a pleasant one.

THE FIRST GYMNASIA IN AMERICA.

The first gymnasia in this country were erected out of doors, in bald imitation of Græco-German models. It is possible that as early as 1821 the Latin School at Salem, Mass., had some sort of a gymnasium, without instructors being provided for its users; but it seems clear that the Round Hill School, established at Northampton, Mass., in 1823, for the liberal education of boys, by Messrs. George Bancroft and Joseph Green Cogswell, was the first institution in this country to make gymnastic exercise a part of the regular course of instruction. This was done in 1825, when the Round Hill Gymnasium was erected under the supervision of Dr. Charles Beck, who had been a pupil and friend of Father Jahn, in Germany.

GYMNASTICS AT ROUND HILL SCHOOL IN 1825.

I am greatly indebted to the venerable Dr. George C. Shattuck, of Boston, who was a pupil at Round Hill, for the following account of the physical training pursued there:

> Dr. Beck, the teacher of Latin, afterward the professor of Latin in Harvard University, was the teacher of gymnastics. A large piece of ground was devoted to the purpose and furnished with all the apparatus used in the German gymnasia. The whole school was divided into classes, and each class had an hour three times a week for instruction by Dr. Beck. At the same time there were a dozen riding horses and classes for riding three times a week. Gardens were assigned the boys, in which they raised plants and vegetables. A piece of land was set apart for building huts. Base-ball, hockey, and foot-ball were the games. I remember playing in a match game at the time of the Presidential election in which Adams and Jackson were candidates. The Jackson boys beat. You notice how much was done for physical training. I remember Mr. Edward Everett speaking at an annual exhibition and telling us how much better a school, how much greater advantages we enjoyed than Mr. Cogswell and himself had at Exeter. Though the school had only an existence of twenty years or less, and failed from want of pecuniary support, I believe that its influence has survived, and a great stimulus was given by it to the cause of education. Developing the bodily powers and strengthening the constitution were there first recognized as of great importance in the education of boys. The boys were very healthy. I only recall one death, from typhoid fever.

In 1828 Dr. Beck published at Northampton a translation of Jahn's "Deutsche Turnkunst". Jahn's enthusiastic idealizing spirit seems to have been caught by his pupil, for Dr. Beck, in his preface, alludes to the advantages to be "derived by a republic from gymnastick exercises, uniting in one occupation all the different classes of the people, and thus forming a new tie for those who, for the most part, are widely separated by their different education and pursuits of life." In the republic of letters Dr. Beck did, indeed, as a professor of Latin, exert a genuine influence; but gymnastics have as yet achieved very little in the way of shaping the affairs of the American Republic, at least in the direction indicated in the preface above cited.

The Round Hill School, in other features than those instanced in Dr. Shattuck's letter, reminds one of Fellenberg's schools at Hofwyl. This is far from surprising when we consider that both Mr. Bancroft and Mr. Cogswell had studied and traveled in Germany, and that Mr. Cogswell's published letters show that he had visited Fellenberg at Hofwyl, and Pestalozzi at Yverdun.

GYMNASTICS AT OTHER SCHOOLS.

It is stated by Barnard, in his *Journal of Education*, that

> Dr. Griscom, who had become acquainted with the gymnastic system from personal observation in the schools of Pestalozzi and Fellenberg in 1818 and 1819, introduced it to some extent into the High School in New York, established by him under the auspices of the New York High School Society in 1825, in imitation of the Public High School of Edinburgh.

Dr. Shattuck himself has, as is well known, done much to perpetuate the ideas inculcated by his masters at Round Hill, by endowing St. Paul's School at Concord, N. H., which enjoys a wide and deservedly high reputation for training boys. It is enough to say that the school has won its success largely because it has been managed in accordance with the designs of its founder, whose views are thus stated in his deed of gift made about 1856:

> The founder is desirous of endowing a school of the highest class for boys, in which they may obtain an education which shall fit them either for college or business: including thorough intellectual training in the various branches of learning; gymnastic and manly exercises adapted to preserve health and strengthen the physical condition; such æsthetic culture and accomplishments as shall tend to refine the manners and elevate the taste, together with careful moral and religious instruction.

THE FIRST GYMNASIUM AT HARVARD COLLEGE.

Dr. Follen, another German exile, was for a time a teacher at Round Hill; like Dr. Beck, he later became a Harvard professor. It was due to Dr. Follen's efforts, backed by an appeal, from the medical professors of the college, strongly recommending the practice of gymnastics, that a gymnasium was organized at Harvard College in May, 1826. Says Rev. Dr. Cazneau Palfrey, in the *Harvard Register:*

> A meeting of all classes was held in the college chapel, such a meeting as I do not remember hearing of on any other occasion, at which a response was made to this appeal, and resolutions passed expressing our readiness to follow the suggestions made in it. One of the unoccupied commons halls was fitted up with various gymnastic appliances, and other fixtures were erected on the Delta [*i. e.*, the college playground]. But Dr. Follen did not confine his operations to these two localities. One day he was to be seen issuing from the college yard at a dog-trot, with all college at his heels, in single file and arms akimbo, making a train a mile long, bound for the top of Prospect Hill. My impression is that the procession was stopped by a farmer who threatened prosecution for damages.

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GYMNASTICS AT YALE AND OTHER COLLEGES.

In September, 1826, the corporation of Yale College voted an appropriation of $300, to be expended under the direction of the faculty for the "clearing and preparing of the grounds [on the college green] for a gymnasium and for the erection of apparatus for gymnastic exercises, with a view to the promotion of the health of the students." In 1826 the Dwight Brothers established a school, known as the New Haven Gymnasium, in whose course of instruction a prominent part was assigned to gymnastics.

In 1828, at Amherst College, a petition of the students for a bowling-alley was denied by the faculty on the ground that it would cause too much noise, but chiefly because "public sentiment would not justify the countenancing of such a game." We may remark in passing, that the new gymnasium at Amherst is provided not only with bowling-alleys but also with billiard tables. The example of Harvard and Yale as to gymnasia, not to speak of that of Round Hill, less than ten miles distant from their college, must have had weight with the Amherst Faculty, at least to the extent of allowing an out-of-door gymnasium. One who entered Amherst as a student in 1829 describes a gymnasium which consisted of "a few horses and parallel bars, with one or two swings in the grove, but even these belonged to a society of students who guarded their property with jealous care."

VIEWS AND EFFORTS OF DR. J. C. WARREN, OF BOSTON.

Dr. John Collins Warren, in his day the foremost surgeon in Boston, was for many years Professor of Anatomy and Surgery in the Harvard Medical School. For some years prior to 1825 he lectured to the students of the college on the laws of health. He was prominent in establishing the Tremont Gymnasium, in 1825, in Boston, being its first president, and also in forwarding Dr. Follen's enterprise at Cambridge in 1826. Dr. Warren endeavored to secure "the distinguished philosopher and gymnasiarch, Professor Jahn," for the head of the Tremont Gymnasium. But "Mr. Jahn was so situated," says Dr. Warren in his "Biographical Notes", "that we could not, without obtaining more means than were at our disposition, lead him to abandon his own country and establish himself for life in ours. The idea of obtaining his aid was therefore relinquished, and I afterward addressed Dr. Lieber, a gentleman of education and in other respects well fitted to take the superintendence of a public gymnasium." The Dr. Lieber referred to was Dr. Francis Lieber, the distinguished publicist, who later became Professor of Law in Columbia College, New York.

Dr. Warren g[illegible] on to say t[illegible] stablishment of the Tremont Gymnasium, "[illegible] egard to novelties, act [illegible] ymnasia were estab[illegible] cademies and colleges, male and female." In 1830 Dr. Warren delivered an address "On the Importance of Physical Education," before the American Institute of Instruction, at Boston. This paper was republished in England, and formed the basis of a small volume on "The Preservation of Health", published by Dr. Warren in 1846. The lecture contains many sound suggestions and criticisms regarding certain abuses, which have by no means disappeared as yet, in female education. How short-lived was the interest evoked by Jahn's pupils, in gymnastics for educational purposes, may be seen from the following extract from Dr. Warren's address:

> The establishment of gymnasia throughout the country promised at one period the opening of a new era in physical education. The exercises were pursued with ardor, so long as their novelty lasted; but, owing to not understanding their importance, or some defect in the institutions which adopted them, they have gradually been neglected and forgotten, at least in our vicinity. The benefits which resulted from these institutions, within my personal knowledge and experience, far transcended the most sanguine expectations. * * * The diversions of the gymnasium should constitute a regular part of the duties of all our colleges and seminaries of learning; and * * * the system of rewards, so dangerous when mismanaged in literary education, might be introduced without any ill effect.

Dr. Warren was very tenacious of his high opinion concerning gymnastics, for we find mention in his Journal, under the date of January 8, 1853, that he "Had much conversation with President Walker [of Harvard College]. Recommended to make gymnastic exercises a part of the duty of the student."

CONDITION OF PHYSICAL TRAINING PRIOR TO THE INTRODUCTION OF THE "NEW GYMNASTICS".

Teachers as a body fifty years ago had neither the training nor the inclination for achieving success in the domain of physical education. What might have been the result if Drs. Beck, Follen, and Lieber had not quit the field it is vain to surmise, since even they were governed more by theoretical and æsthetic notions than by scientific knowledge of the laws of bodily health and development. The late Dr. E. Jarvis, in his "Practical Physiology", notes that when the gymnasium was established at Harvard University in 1826, "the students were invited to go to the play-ground at 12 and engage in the gymnastic exercises till 1 o'clock. These were very active, and some of them violent, for men and boys of their strength, so that when they left the field for dinner they were generally fatigued, and some were almost exhausted. Those who were most fatigued ate their dinner with less than their usual relish, and felt neither refreshed nor comfortable afterward."

When we consider that in the case of the early gymnasia the appliances were r[illegible]y protected from the weather; that competent native teachers did [illegible] exist; that funds were not forthcoming to attract such [illegible] abroad; [illegible] that the prepossessions of the teaching class, and of boards of trust, were in general such as to render them indifferent, if not positively averse, to the maintenance of a genuine and thoroughgoing system of bodily training, the reasons are not far to seek for the slow and often retarded development of physical training as a branch of American education.

Here and there a handful of enthusiastic and athletically inclined students, as at Princeton College in 1857, would attempt to furnish and maintain a gymnasium, or would patronize some private venture of an athlete or pugilist; but there appears to have been no well-considered and sustained attempt by the authorities of any American college to provide its students, either with instruction in gymnastics or adequate facilities for athletic sports, during the period extending from 1826 to 1860.

THE GYMNASIUM AT THE UNIVERSITY OF VIRGINIA.

Possibly the University of Virginia presents an exception to this statement, inasmuch as there was a large out-of-doors gymnasium maintained on the grounds of that institution from 1852 till the outbreak of the war. A competent gymnast and sword-master, a Frenchman, had it in charge; but in order to support himself he had to eke out the small sum received from the students by cultivating a kitchen-garden and keeping a Russian bath-house.

REVIVAL OF INTEREST IN PHYSICAL TRAINING.

Just before and just after the outbreak of the war in 1861, a great interest sprang up, especially among students, in regard to gymnastics, feats of strength, and athletic sports. During this period Dr. Windship appeared in Boston as the champion and exemplar of the severest form of gymnastics, that of lifting heavy weights. The Tom Brown books by Thomas Hughes, which were published about this time, served to fire the imagination of school-boys and collegians, and to enhance the interest of their elders in athletics and gymnastics. The Doctors Taylor in New York and Dr. Lewis in Boston attained considerable success as exponents of Ling's Medical Gymnastics, or the Swedish Movement Cure.

THE NEW GYMNASTICS.

DR. DIO LEWIS AND HIS INFLUENCE.

Dr. Dio Lewis labored strenuously for the introduction of his "new gymnastics for men, women, and children," and succeeded in organizing in 1861 his Normal Institute for Physical Education in the city of Boston. President Felton, of Harvard University, was its active and earnest presiding officer up to the time of his death. The Institute embraced the departments of anatomy, physiology, and hygiene, that of vocal culture, and that of gymnastics. The full course of instruction was ten weeks. At Boston, and later at Lexington, a large number of teachers of the "new profession" were graduated. The first class, graduated in September, 1861, numbered fourteen.

Dr. Lewis's book, "New Gymnastics for Men, Women, and Children, with a Translation of Prof. Kloss's Dumb-bell Instructor and Prof. Schreber's Pangymnastikon," was widely read, and reached its eighth edition in the course of two years. It was believed that an era had begun in which the "new gymnastics" would be universally introduced into the schools throughout the land. The problem of physical education was considered solved, because free gymnastics could be carried out in any school-room without removing the desks.

MISS BEECHER'S EXPERIMENTS IN CALISTHENICS FOR GIRLS.

Prior to 1861 very little had been undertaken in the way of teaching girls gymnastics, though Miss Catherine E. Beecher's efforts in that direction at Hartford, Conn., and later, in 1837, at Cincinnati, O., merit notice. In her "Educational Reminiscences and Suggestions", published in 1874, Miss Beecher says:

> In Cincinnati I invented a course of calisthenic exercises, accompanied by music, which was an improvement on the one I adopted at Hartford. The aim was to secure all the advantages supposed to be gained in dancing-schools, with additional advantages for securing graceful movements to the sound of music. These exercises were extensively adopted in schools, both east and west, but finally passed away. One reason was that they demanded a piano or some other instrument, and a large room without furniture; another was the want of appreciation of physical exercise, and of the importance of training young girls to simple *gracefulness*. To meet the first difficulty, I arranged a system of exercises which could be used in a school-room without removing desks and benches, to be performed either with or without music; and this method is found in my work on physiology and calisthenics, which has been extensively adopted. Dr. Dio Lewis's system of gymnastics includes many of my methods, with additions which seem objectionable in this respect: they are so vigorous and *ungraceful* as to be more suitable for boys than for young ladies. When physical education takes the proper place in our schools, young girls will be trained in the class-rooms to move head, hands, and arms gracefully; to sit, to stand, and to walk properly, and to pursue calisthenic exercises for physical development as a regular school duty as much as their studies; and these exercises, set to music, will be sought as the most agreeable of school duties.

Such exercises are not as yet so sought, to any considerable extent, we may remark.

THE GYMNASIA OF THIS PERIOD.

Although the glowing anticipations concerning the immediate and future usefulness of the light gymnastics, as distinguished from the heavy gymnastics, as the Turning exercises were called, were not realized, the era of building gymnasia dates from 1859–'60. Up to 1859 no college in the country possessed a commodious and well furnished building devoted to the purposes of physical training. In the year 1859–'60, however, Amherst, Harvard, and Yale Colleges built gymnasia.

T. W. HIGGINSON ON GYMNASTICS.

An article entitled "Gymnastics," by Thomas Wentworth Higginson, in the *Atlantic Monthly* for March, 1861, admirably reflects the sentiment of that time on the part of those who were anxious to improve educational methods. Mr. Higginson says:

> It is one good evidence of the increasing interest in these exercises that the American gymnasia built during the past year or two have far surpassed all their predecessors in size and completeness, and have probably no superiors in the world. The Seventh Regiment gymnasium in New York, just opened by Mr. Abner S. Brady, is 180 by 52 feet in its main hall, and 35 feet in height, with nearly 1,000 pupils. The beautiful hall of the Metropolitan Gymnasium, in Chicago, measures 108 by 80 feet, and is 20 feet high at the sides, with a dome in the center 40 feet high and the same in diameter. Next to these probably rank the new gymnasium at Cincinnati, the Tremont Gymnasium at Boston, and the Bunker Hill Gymnasium at Charlestown, all recently opened. Of college institutions the most complete are probably those at Cambridge and New Haven. The arrangements for instruction are rather more systematic at Harvard. * * *
>
> Gymnastic exercises are as yet but very sparingly introduced into our seminaries, primary or professional, though a great change is already beginning. * * * Until lately all our educational plans have assumed man to be a merely sedentary being; we have employed teachers of music and drawing to go from school to school to teach those elegant arts, but have had none to teach the art of health. * * * It is something to have got beyond the period when active sports were actually prohibited. I remember when there was but one boat owned by a Cambridge student, and that boat was soon reported to have been suppressed by the Faculty, on the plea that there was a college law against a student's keeping domestic animals, and a boat was a domestic animal within the meaning of the statute. * * *
>
> It would be unpardonable, in this connection, not to speak a good word for the favorite hobby of the day—Dr. Lewis and his system of gymnastics; or, more properly, of calisthenics. * * * Dr. Windship had done all that was needed in apostleship of severe exercises, and there was wanting some man with a milder hobby, perfectly safe for a lady to drive. The Fates provided that man also in Dr. Lewis—so hale and hearty, so profoundly confident in the omnipotence of his own methods and the uselessness of all others, with such a ready invention, and such an inundation of animal spirits, that he could flood any company, no matter how starched or listless, with an unbounded appetite for ball-games and bean-games. How long it will last in the hands of others than the projector remains to be seen, especially as some of his feats are more exhausting than average gymnastics; but in the mean time it is just what is wanted for multitudes of persons who find or fancy the real gymnasium to be unsuited to them. It will especially render service to female pupils so far as they practice it; for the accustomed gymnastic exercises seem never yet to have been rendered attractive to them on any large scale, and with any permanency.

In another connection the same writer says:

> Wherever Dr. Lewis's methods have been introduced important advantages have followed. He has invented an astonishing variety of games and well-studied movements, with the lightest and cheapest apparatus, balls, bags, rings, wands, wooden dumb-bells, small clubs, and other instrumentalities, which are all gracefully and effectually used by his classes, to the sound of music and in a way to spare the weakest when lightly administered or to fatigue the strongest when applied in force. Being adapted for united use by both sexes, they make more thorough appeals to the social element than ordinary gymnastics; and evening classes, to meet several evenings in a

week, have proved exceedingly popular in some of our towns. These exercises do not require fixed apparatus or a special hall. Dr. Lewis himself is now training regular teachers to carry on the same good work, and his movement is undoubtedly the most important single step yet taken for the physical education of American women.

OUTCOME OF THE "NEW GYMNASTICS."

Further on we shall have occasion to outline the development of military drill and discipline as a feature in school and college training, and to speak of the stimulus given by the War to all forms of bodily training and exercise, and especially to athletic sports and contests. At this point we need only note that, although what we may term the light gymnastic movement was instrumental in causing the erection of a considerable number of school and college gymnasia and the inauguration of a few poorly-endowed and rudely-organized departments of physical culture, the force of the movement was soon spent, and the schemes for physical training assumed a semi-military character.

OPENING OF THE ERA OF BUILDING GYMNASIA IN COLLEGES.

The Amherst, Harvard, and Yale gymnasia, as was stated above, were built in 1859–'60. Their external dimensions were, respectively, 72 by 50 feet, 85 by 50 feet, and 100 by 50 feet. They cost, respectively, in round numbers, $15,000, $10,000, and $13,000, and were, for their time, elaborate and well furnished structures. The Amherst gymnasium was named the Barrett Gymnasium, in honor of Benjamin Barrett, M.D., of Northampton, Mass., who was the largest contributor to the fund for its erection. Dr. Barrett's name does not appear on the roll of the Round Hill School; but it is not unlikely that familiarity with the workings of that institution may have been influential in determining his gifts to the Amherst gymnasium. One gentleman, who declined to give his name, gave $8,000 toward the building of the Harvard gymnasium. These three gymnasia have all been outgrown, and those at Amherst and Cambridge have been replaced by costly and vastly improved edifices.

CHARACTER OF THE TRAINING ADOPTED.

From the outset compulsory exercise has been required of all able-bodied students at Amherst, under the control and direction of an educated physician, whose professorial chair was accorded a place at the faculty table. Gymnastics have never been required at Harvard, where Dr. D. A. Sargent was, in 1879, appointed Assistant Professor of Physical Training, and Director of the Hemenway Gymnasium. His predecessors were a professional teacher of boxing, and a master of military drill. At Yale College no very comprehensive or commendable system of administration has as yet been worked out.

DEPARTMENT OF PHYSICAL EDUCATION AT AMHERST COLLEGE.

The salient facts concerning the beginning, growth, and peculiarities of the department of hygiene and physical education of Amherst College demand our attention at this point; for, as has been well said by President Eliot of Harvard, "It is to Amherst College that the colleges of the country are indebted for a demonstration of the proper mode of organizing the department of physical training."

VIEWS OF PRESIDENT STEARNS.

When the late W. A. Stearns, D.D., was inaugurated as President of Amherst College, in 1854, he devoted a considerable portion of his discourse to enforcing the proposition that no course of education was complete that did not devote special attention to securing the normal development and healthy working of the body. In his first report to the trustees, in 1855, President Stearns said:

> No one thing has demanded more of my anxious attention than *the health of the students*. The waning of the physical energies in the midway of the college course is almost the rule, rather than the exception, among us, and cases of complete breaking down are painfully numerous.

A year later he tells the trustees that the breaking down of the health of the students is, in his opinion, "wholly unnecessary." In his report for 1859, President Stearns again returns to the consideration of the question of students' health, and says:

> Time and experience have convinced me of an imperious demand, in the circumstances of an academic life, for immediate and efficient action on this subject. Many of our students come from farms, mechanic shops, and other active occupations, to the hard study and sedentary habits of college. Physical exercise is neglected, the laws of health are violated, the protests and exhortations of instructors and other friends are unheeded. The once active student soon becomes physically indolent, his mental powers become dulled, his movements and appearance indicate physical deterioration. By the time Junior year is reached many students have broken down in health, and every year some lives are sacrificed. Physical training is not the only means of preventing this result, but it is among the most prominent of them. If it could be regularly conducted, if a moderate amount of physical exercise could be secured as a general thing to every student daily, I have a deep conviction, founded on close observation and experience, that not only would lives and health be preserved, but animation and cheerfulness and a higher order of efficient study and intellectual life would be secured. It will be for the consideration of this Board, whether, for the encouragement of this sort of exercise, the time has not come when efficient measures should be taken for the erection of a gymnasium and the procuring of its proper appointments.

These remarks were rendered emphatic by a statement concerning the death of two seniors who had broken down under college life.

INSTITUTION OF THE DEPARTMENT BY THE TRUSTEES.

The trustees concluded that the time for erecting a gymnasium had come, and set about raising the money for it, with the result before alluded to. It was unanimously voted by the trustees—

To establish a department of physical culture in this college, and that the duties of its professor shall be:

(1) To take charge of the gymnasium and give instruction to the students in gymnastics.

(2) To take a general oversight of the health of the students, and to give such instruction on the subject as may be deemed expedient, and under the direction of the Faculty, like all the other studies.

(3) To teach elocution so far as it is connected with physical training.

(4) He shall give lectures from time to time upon hygiene, physical culture, and other topics pertaining to the laws of life and health, including some general knowledge of anatomy and physiology.

(5) The individual appointed to have charge of this department shall be a thoroughly-educated physician, and, like other teachers and professors, shall be a member of the college Faculty. It is distinctly understood that *the health of the students* shall at all times be an object of his special watch, care, and counsel.

At the suggestion of Dr. Nathan Allen, of Lowell, Mass., the well-known writer on hygiene and sociology, then and now one of the trustees of the college, it was voted to designate the head of the newly created department as the Professor of Hygiene and Physical Education. Dr. Allen was also mainly responsible for the definition of the duties of the professorship as embodied in the vote quoted above.

The plan of the president and Faculty alluded to under the second head of this vote was as follows:

First, The main object shall not be to secure feats of agility and strength, or even powerful muscle, but to keep in good health the whole body. *Second*, That all the students shall be required to attend on its exercises for half an hour, designated for the purpose, at least four days in the week. *Third*, The instructor shall assign to each individual such exercises as may be best adapted to him, taking special care to prevent the ambitious from violent action and all extremes, endeavoring to work the whole body, and not overwork any part of it. *Fourth*, That while it may not be expedient to mark the gradation of attainment, as in the intellectual branches, yet regularity, attention, and docility should be carefully noted, so as to have their proper weight in the deportment column of the student's general position. *Fifth*, That some time shall be allowed out of study hours for those volunteer exercises which different men, according to their tastes, may elect for recreation, and particularly that the bowling alleys be not given up to promiscuous use, but be allotted at regular hours to those who wish to make use of them—all these volunteer exercises, of whatever kind, to be under the supervision of the gymnasium instructor. *Sixth*, That the building shall always be closed before dark, that no light shall be used in it, and no smoking or irregularities of any kind shall be allowed in it. *Seventh*, That the instructor ought to be a member of the Faculty, and give in to it his marks and occasional accounts, and receive directions as other officers of the college are accustomed to do.

The department has been administered from the first without any material deviation from the plan thus outlined.

HISTORY OF THE DEPARTMENT SINCE 1860.

In August, 1860, J. W. Hooker, M.D., a graduate of Yale College, was appointed Professor in this department. It is said of him that he had "given special attention to physical training, and, being himself a skillful gymnast, possessed qualities that eminently fitted him for starting such an enterprise. But before the close of the year his health failed, and he resigned his position, and died in about two years afterward." The attention and coöperation of the students were the more easily enlisted in the new departure, owing to the martial spirit then so rife. During the spring of 1861 Colonel Lyman, a distinguished drill-master, was employed to give instruction and training in military tactics and exercises.

In August, 1861, Edward Hitchcock, M.D., a graduate of Amherst College and of the Harvard Medical School, was appointed Dr. Hooker's successor. Dr. Hitchcock has served continuously in that capacity from then till now.

The best exposition of the Amherst system of training and its results is found in Dr. Hitchcock's "Report of Twenty Years Experience in the Department of Physical Education and Hygiene in Amherst College, to the Board of Trustees, June 27, 1881. Amherst, Mass.: Press of C. A. Bangs & Co., 1881," from which the following extracts are taken:

> Physical culture as expressed to Amherst College students by the experience of the past twenty years, means something besides, something in addition to, muscular exercise. It includes cleanliness of skin, attention to stomach and bowels, relaxation from daily mental work, freedom from certain kinds of petty discipline, but with so much requirement and restraint as will give coherence, respect, and stability to the methods of maintaining health and the men employing them.
>
> The way in which students here are called upon to secure health, and its correct and normal maintenance for college requirements, is to be sure of some active, lively, and vigorous muscular exercise at stated periods; not requiring a rigid military or hardening drill of certain portions of the body, but offering them such exercises as shall, while regularly engaged in, be vigorous, pleasant, recreative, and at the same time, even without a manifest consciousness of it, be calling into exercise their powers in active, vigorous, easy, and graceful movements. Light wooden dumb-bells, weighing about one pound each, are placed in the hand, and then a series of movements are directed and timed by music, occupying in all from 20 to 30 minutes each day, and are simultaneously performed by a whole class under the lead of the captain.
>
> Believers in heavy gymnastics are apt to regard our exercises as perhaps well enough for girls and children, because they are only the swinging of one-pound dumb-bells for less than half an hour. And they would reflect upon the exercise and call it calisthenics, and not dignify it by the term gymnastics. To this we would only say, "What's in a name?" If calisthenics only accomplishes what we need, our wants are satisfied. * * * Certain it is that the young men at the close of one of these exercises, with the temperature at 60°, have ordinarily secured moisture on the skin, are breathing full and deeply, the blood circulates, the abdominal viscera are sufficiently stimulated, and their muscles are limber and elastic; they have gained good exercise, and the whole man has the feeling that he has worked in a physical way, and yet is not exhausted. The whole body in the loose and easy uniform, unconstrained by a rigid piece of appar[illegible] a freedom of action which cannot

be acquired by the stolid march, or the constraint of either fixed or many kinds of movable gymnastic apparatus; and, lastly, the students generally feel, withal, that they have had a good time. And the mental and social freedom allowed and encouraged in these exercises conduces to the rapid and healthful evaporation of superfluous animal spirits, generated by the physical and mental confinement of study.

And while our methods are not so perfect as might be devised with more complete apparatus and better men to direct, if health of college be the only thing to be considered, they do seem to be good as far as they go; enough for the large majority, and of some service to all. * * *

During the first few years of our work, the simpler and easier forms of heavy gymnastic work were required of *all* the class; every man was expected to practice heavy gymnastics under direction of the leader, one of the class. This became very tedious work, irksome and impossible for some men to do except with such effort, moral and physical, as was injurious to be put on a large part of every class. * * * But it was found out that the men who were sound in all four of their limbs and eyesight could go through movements enough with wooden dumb-bells to secure the necessary muscular waste and development for healthful study, and hence no requirement for heavy gymnastic work has been made of any student for the past fifteen years. At the same time there are a few who take as naturally to heavy gymnastics, and as profitably too, as ducks to water, and these are allowed and encouraged to reasonable efforts in this direction. These at first are guided and watched, but they are at length allowed and expected to go on with their exercise in this direction at their own discretion, save with the aid of one of the older classes who has shown himself the best gymnast in college.

And once during each year a prize exhibition is held, when the individual students may compete with each other in heavy gymnastics, and the classes may show their proficiency in light exercises with dumb-bells and marching. For the first few years the morning hour was secured as the best time for the physical exercises of the college. And while in theory, and perhaps fact, this is the best time for exercise, yet the hour of early evening, between daylight and darkness, has come to be the time which we have of late most largely employed for gymnastics. * * *

STATISTICAL WORK AND RESULTS.

One of the first duties I felt called upon to perform after your appointment to this Professorship, was to prepare blanks for several anthropometric observations of the students of college. This I did partly to enable the students to learn by yearly comparison of themselves how they are getting on as regards the physical man. The ulterior object, however, was to help ascertain what are the data or constants of the typical man, and especially the college man. I have conceived no theory on the subject, and have instituted but very few generalizations; but my desire has been to carefully compile and put on record as many of these observations as possible for comparison and verification of statistical work in this same direction by many other persons in America and Europe.

In many of the final results of these twenty years data, it is interesting to find a general correspondence to the established data of more numerous measurements of the human body, and in the variation from authorities of large experience we find the differences as a whole in favor of the student. These results seem to show that we must expect different physical characteristics in those who pursue the scholarly life, from others whose occupations are unlike them in so many ways, and when properly understood and carried out we believe that the advantages will be found on the side of the scholarly life.

In the fall of 1861 I took measurement of all the college students in seven particulars, and have faithfully made these examinations of almost every sound man since connected with the college up to the present date. The measurements are made of the Freshmen soon after entering, and are repeated upon them near the end of each year

of the course. Thus every man who goes through college has been observed five times. These observations during the first year were the age, weight, height, chest girth, arm girth, fore-arm girth, and body lift. The second year the capacity of the lungs was added, and for the last five years the finger reach and the chest expansion, and for the last two years the comparative strength of the two hands.

* * * * * * *

The health of college, so far as figures and statistics can show it, must be represented by data of the sickness of students, and, like the anthropometric observations, those of sickness are made from all the students, and by yearly reckonings. During these twenty years 5,443 different entries, not individuals, have been on the annual catalogues. Of this number 1,365 were entered on the sick list, representing those who during their course have been absent from all college duties on account of sickness for more than two consecutive days in term time. This gives a per cent. of the students by entries, as at one or more times disabled by illness, of 25.26. A noticeable point appears in the record of sickness as possibly showing the healthfulness of college life; it is the decrease of illness from Freshman to Senior year. The data are given in Table No. 4, but the fact of interest is that while the per cent. of Freshmen sick is 20.30, that of the Seniors is 19.05.

It may be thought, however, that as classes decrease in numbers, perhaps the diminution of sickness is only on a par with the numerical falling off of the classes. But while the health increase of the course is 10.18 per cent., the natural dropping out is only 5.95 per cent.

The time lost by sickness, as averaged on every student, is 2.65 days yearly. This of course is constructively applied. Although but 1,375 students are recorded on the sick list, yet the number of cases of sickness recorded is 1,725. This means that some have been on the sick list two or more times, or 25 per cent. of the whole number sick; and the amount of time actually lost from college exercises by each of the sick men has been 10.39 days on the average.

The maladies of college life are those of youth, and not debility or infirmities. As would be expected, colds and slight lung difficulties are the most numerous, constituting nearly one-half of the whole amount; and while physical injuries stand second on the list of causes, it is instructive to learn that no serious or permanent injury has ever happened from the gymnastic exercises, required or voluntary.

A natural inquiry is, if many of the students have left college on account of ill health. * * * Seventy are reported as having left college on account of physical disability, or more than three each year. Of these, however, twenty-two, or less than one-third of the whole number, have re-entered and graduated with the class next to the one which they first entered. Or, to put it numerically, 48 out of 2,106, or 2.27 per cent. of our students, failed in their college course on account of sickness. Do the records of other occupations appear more favorably?

By the laws of viability, or chance of life in males from birth, as established by census returns and life insurance tables, this "chance of life," the world over, decreases from the ages of 15 or 16 on to 25, then rises to 30, and then falls to the end of our existence. Or the curve of viability ascends rapidly from birth to 15 or 16 years, and then slowly descends to old age. But by the Health Records of our students we find a variation from this law, since we learn that sickness diminishes in our life here from 18 to 22 years of age. This fact, with some others already mentioned, discriminates in favor of the healthfulness of student life.

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Another subject illustrated by this department and its statistics is the amount of growth, and is seen in Table No. 6. This embraces many of the students who have completed the course, or given the data at entering and graduating, with a difference in time of three years and six months, and an age of 19.2 and 22.11. Seven hundred and forty-nine men have been measured, and these have furnished 5,160 items of the

seven different points of observation. Of all these men measured, 26.15 per cent. give an increase in all the items during the whole period observed. And 47.39 per cent. of the men show some of the same measurements at Senior as at Freshman year. And it is not the oldest or those least developed in whom this occurs. And 53.40 per cent. give one or more items less at Senior than Freshman year, and 28.17 give one or more items less, and also one or more the same. Of the items measured, however, a different showing is made. The average of the whole 5,160 items shows 76.97 per cent. increased during the course, 13.58 per cent. less at the end of the course, and 9.43 per cent. the same as at entrance to college, and it will be seen that some men give both increased and diminished items: some items may be smaller and some items be larger at the same time. The average increase of the 26 per cent. of these, in weight has been 12.27 pounds, 1.05 inches in height, 1.45 in chest girth, 0.85 inches in arm girth, 0.685 in fore-arm girth, 28.4 cubic inches in lung capacity, and nearly 4.50 times in body lift. This is what the college student may expect to grow from the 19th to the 23d year of his life. The items and points of increase may be found in Table No. 6.

A part of the work in this department is instruction in the general laws of health, and in anatomy and physiology. The lectures in health are given the first term of Freshman year, and the subjects are those which specially pertain to student life, such as exercise, food, use of alcohol and tobacco, care of the eyes, the relation of body to mind, and kindred matters.

The instruction in human anatomy and physiology is given by study of a text-book, a printed abstract, and illustrative lectures. Much of the illustration is aided by the clastic models of Auzoux, nearly $1,000 worth of which have been given to the college within the past few years. This study is taken up early in the Sophomore year. Optional study in comparative vertebrate zoölogy has been carried on in addition to other work, and can be well illustrated by the collections in Appleton Cabinet.

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In athletic sports, rowing, base and foot ball, and college games generally, this department has ever given encouraging though not inciting words. We have encouraged home sports and games, and not stimulated the young men to enter into the hot and violent contests with professional gamesters. With the example of the oldest and largest colleges, and with the comity, rivalry, and good fellowship so largely existing, it is but natural that our college should desire to compare its muscle and wind with those in similar positions. We have had several trials, and been as successful as we ought to expect with smaller numbers to select from, and some disadvantages incident to our geographical location.

In our home athletic sports we have taken a deeper interest. The annual and semiannual field days have always been well attended, both by contestants and spectators, and we have a good record. And the preparation and participation in these contests, this department has ever regarded as a full equivalent for the required gymnasium exercises, as they are always undertaken under leaders, or directors, who have carried them through with systematic and thorough drill. And for the training of all the students, it seems clear that there are a certain number who must have these hard and severe tests in developing and maintaining their powers up to their best possibilities.

Besides the regular class exercises as required, and the heavy work as encouraged and allowed, there are always a few who need special exercise and advice. These are attended to as well as our limited apparatus will allow. But in the coming near future, when we can see an enlarged and well equipped health building, we may then hope for advanced hygienic development in the few who require special training to secure the normal and healthful development.

TABLE No. 1.—*Measures of* 2,106 *different students of Amherst College, showing the averages of each class for twenty years, in age, weight, height, chest girth, arm girth, fore-arm girth, lung capacity, body lift, finger reach, chest expansion, and the comparative right-hand and left-hand strength.*

	Seniors.	Juniors.	Sophomores.	Freshmen.	College average.	College mean.
Number observed	1,113	1,148	1,263	1,489	5,013	....
Age	22.24	21.87	20.57	19.31	21.10	....
Weight	142.19	140.59	139.39	133.19	138.84	131.00
Height	67.94	67.86	67.53	67.33	67.66	67.50
Chest girth	35.97	35.61	35.44	34.76	35.40	35.50
Arm girth	11.77	11.72	11.69	11.23	11.19	11.25
Fore-arm girth	11.21	11.07	11.06	10.80	11.02	....
Lung capacity	251.05	250.07	249.23	233.08	241.79	230.00
Body lift	11.33	11.31	10.58	8.61	10.25	11.00
Finger reach	69.72	69.78	69.70	69.60	69.69	....
Chest expansion	3.18	3.33	3.45	3.00	3.02	....
Right-hand strength	92.02	88.99	90.45	87.83	89.69	....
Left-hand strength	86.48	85.98	86.05	83.34	85.50	....
Per cent. strongest with right hand	98	97	96	96	95	....

TABLE No. 2.—*Maxima and minima of every measurement of the* 2,106 *students observed.*

	Age, years and months.	Weight in pounds.	Height in inches.	Chest girth in inches.	Arm girth in inches.	Fore-arm girth in inches.	Lung capacity in cubic inches.	Body lift.	Finger reach in inches.	Chest range in inches.
Maxima	35.6	216	76.5	43.00	15.5	15.50	426	65	81.10	5.50
Minima	15.3	84	58.0	27.25	8.0	8.25	115	2	48.00	1.50

TABLE No. 3.—*The mean observations of the measures of Amherst College students for twenty years, from a total of* 34,384.

Weight in pounds.	Number.	Height in inches.	Number.	Chest girth in inches.	Number.	Arm girth in inches.	Number.	Lung capacity in cubic inches.	Number.	No. of times body lifted.	Number.
175	69	72	104	40	61	14.0	44	340	58	21	88
167	105	71	291	39	165	13.5	81	320	94	20	176
159	238	70	385	38	394	13.0	323	300	275	18	372
151	490	69	808	37	704	12.5	602	280	608	16	610
143	798	68	955	36	1,079	12.0	1,117	260	871	14	790
135	1,157	67	986	35	1,164	11.5	1,205	240	1,287	12	940
127	1,198	66	790	34	1,098	11.0	1,245	220	1,275	10	1,075
119	982	65	571	33	682	10.5	658	200	732	8	796
111	487	64	371	32	310	10.0	316	180	379	6	590
103	163	63	208	31	104	9.5	77	160	148	4	302
95	46	62	65	30	41	9.0	17	140	39	2	120
....	5,733	....	5,534	....	5,812	....	5,685	....	5,761	....	5,859

TABLE No. 4.—*Data of student sickness and physical disability for nineteen years and nine months in Amherst College.* (*Students' names on the annual catalogues* 1861 *to* 1881, *inclusive*, 5,443.)

	Names on annual catalogues for 20 years.	Names on sick list.	Per cent. of each class to whole college.	Per cent. of sickness in each class to whole college.
Seniors	1,192	260	21.90	19.05
Juniors	1,270	319	23.33	23.37
Sophomores	1,465	386	26.92	28.28
Freshmen	1,516	400	27.85	29.30
Total	5,443	1,365	100.00	100.00

Students on the sick list	1,375
Cases (not individuals) of sickness	1,725
Cases on sick list more than once in the year	350
Per cent. of college on the sick list	25.26

Maladies of the students, and their proportion, when it equals one or more per cent. of the whole. (*This is the number of cases, not students.*)

Maladies.	Per cent.	Maladies.	Per cent.
Colds, pneumonia, bronchitis, &c	37.4	Liver and bilious	2.3
Physical injury	8.8	Neuralgia	1.8
Febriculæ	4.8	Malaria	1.7
Eyes—weak and sore	4.7	Mumps	1.7
Quinsy and sore throat	4.6	Diphtheritic	1.1
Boils	4.1	Measles	1.1
General inability	3.1	Teeth	1.1
Typhoid fever	3.1	Stomach	1.1
Bowels	2.6	Overwork	1.0

TABLE No. 5.—*The measures of weight, height, chest, arm girth, lung capacity, and body lift of 2,106 different students of Amherst College, arranged by age.*

Age.	Number of observations.	Weight.	Height.	Chest.	Arm.	Lung capacity.	Body lift.
17	330	131.99	66.60	33.87	11.12	224.8	8.58
18	1,172	134.07	66.96	35.10	11.36	238.7	10.35
19	1,511	135.84	67.30	35.38	11.52	240.3	10.82
20	1,358	138.12	67.95	35.52	11.57	248.8	10.97
21	1,171	140.00	68.01	35.58	11.69	250.1	10.84
22	807	141.07	68.11	35.98	11.77	250.8	10.92
23	559	141.21	68.31	36.29	11.71	257.0	10.63
24	362	142.42	68.44	37.23	11.74	261.0	10.62
25	216	145.12	68.68	36.66	11.79	263.6	10.11
26	141	144.91	68.82	37.46	11.81	262.5	10.71
27	71	144.40	68.30	36.95	11.84	268.4	10.37
28	30	140.71	68.52	36.28	11.57	269.8	8.51
29	19	142.68	68.09	36.41	11.61	260.5	9.86
30	18	146.50	69.19	36.70	11.61	279.5	7.50

TABLE No. 6.—*Giving the measure of 749 students of Amherst College at two intervals of three years and six months, and at an average age of nineteen years and two months at the first observation, showing their physical development during this period.*

		Per cent.
Number of *men* measured	749	.....
“ “ increased in all items	196	26.15
“ “ decreased in some items	401	53.40
“ “ both same and increased items	355	47.39
“ “ both same and decreased items	211	28.17
Number of *items* secured	5,160	.....
“ “ showing increase	3,972	76.97
“ “ same Freshman and Senior year	487	9.43
“ “ less on Senior year	701	13.58

	Weight.	Height.	Chest.	Arm.	Fore-arm.	Lung capacity.	Body lift.
Greatest individual gain	56.00	6.00	6.50	4.00	3.50	1.34	25.00
Averages of increased men	12.27	1.05	1.45	0.853	0.685	28.4	4.50
Per cent. of decreased items	11.00	0.00	20.31	13.46	25.27	14.64	20.13

SYSTEM OF REWARDS.

The “system of rewards” advocated by Dr. J. C. Warren in 1830, in connection with his suggestion that “the diversions of the gymnasium should constitute a regular part of the duties of all our colleges and seminaries,” has assumed considerable proportions, and is considered valuable at Amherst. There are three scholarships connected with this department, and the following prizes are annually competed for:

The Sawyer prize, given by the late Edmund H. Sawyer, of Easthampton, a gold medal of the value of fifty dollars, for the best work in human anatomy and physiology.

Gymnastic prizes: (1) The Gilbert prize, given by Frederick Gilbert of Cincinnati, O., class of 1877, one hundred dollars to the class which, during the year, shall most faithfully discharge its duties in the gymnasium, and carry out most fully the instruction of the professor of hygiene. (2) The Ladd prize, given by William M. Ladd of Portland, Or., class of 1878, fifty dollars a year for excellence in heavy gymnastic exercises at the annual exhibition.

COLLEGE GYMNASIA BUILT SINCE 1860.

The list of colleges, not to mention numerous high, normal, and private-adventure schools, which provided their students with gymnasia during the period 1860–'81, is a considerable one, and includes such institutions as the following for young men: Beloit, Bowdoin, Dartmouth, Hamilton, Oberlin, Pennsylvania, Princeton, Union, Wabash, Williams, and Yale Colleges; and Brown, California, Cornell, Harvard, Vanderbilt, Wesleyan, and Wisconsin Universities; and the Massachusetts Institute of Technology, Phillips Andover Academy, St. Paul's School, Williston Seminary, and Cushing Academy; and Smith, Vassar, and Wellesley Colleges, and Mt. Holyoke Seminary for young women. In the majority of cases instruction, where it has been attempted, has been spasmodic, unintelligent, and half-hearted. In a few instances only, prior to 1879, when the new Hemenway Gymnasium was opened at Harvard, have fairly competent gymnasts been employed. In no case has the course adopted been so comprehensively planned or so carefully and continuously carried out as at Amherst. Ill-advised expenditures upon buildings, vague aims, and inadequate organization, have characterized the management of most of the attempts to institute departments of physical training in our superior schools and colleges.

At the request of the Vice-Minister of Education in Japan, Mr. Tanaka-Fujimaro, who visited Amherst in 1876, Dr. G. A. Leland, Captain of the Class of 1874, was designated by President Seelye to introduce the Amherst system of gymnastics into the Government schools of Japan. For three years Dr. Leland was engaged in that work to the "high satisfaction of the Government," as was officially communicated to President Seelye.

Of the three college gymnasia built in 1860, viz., those at Amherst, Harvard, and Yale, the last-named was the best arranged and most completely furnished. The gymnasium built by Princeton College in 1869 was until 1879—the date of the finest of college gymnasia as yet erected, the Hemenway Gymnasium at Harvard University—by far the best of its kind. Toward the total cost of its site and erection, $38,000, Messrs. R. Bonner and H. G. Marquand, of New York City, each contributed the sum of $10,000. The Bissell Gymnasium at Dartmouth College should be mentioned in this connection. It was built through the munificence of a Dartmouth alumnus, Mr. G. H. Bissell, of New York City, at a cost of $24,000, in 1866.

THE PRINCETON GYMNASIUM AND ITS ADMINISTRATION.

On account of its ancient pre-eminence, the Princeton gymnasium merits more than a passing mention. Thanks are due to Mr. George Goldie, for fifteen years its efficient superintendent, for the following description of this gymnasium and the methods of management there in vogue in 1882-'83:

The building was planned by George B. Post, of New York. It is of stone, and comprises 2 stories and a cellar. There are 3 rooms on the ground floor: the main room, 30 by 70 feet, contains 4 bowling alleys; the dressing-room, 78 by 14 feet, contains 221 lockers and 6 wash-basins; there is a room 70 by 10 feet for base-ball pitching, and there are 3 shower-baths, supplied with hot and cold water; also 1 water-closet and 1 urinal.

The gymnasium proper occupies the second floor. Its dimensions are 78 by 52 feet, height to beams 21 feet, to apex of roof 45 feet. It is lighted and ventilated by 5 dormer windows, 1 double dormer window at the east end, another at the west, and by 5 windows on the south side, coming to within 3 feet of the floor.

The apparatus consists of 20 sets of chest and other pulley weights; 60 pairs of Indian clubs, varying from 2 to 18 pounds in weight; 1,000 pounds of dumb-bells; 1 hand-lifting machine; 1 set of tug-of-war weights; 1 abdominal machine; 4 rowing-machines; 1 set of parallel bars, 20 feet long; 1 steel core, and 1 graduated horizontal bar; 2 inclined ladders, 25 feet long; 1 horizontal ladder, 30 feet long; 1 pair of flying rings; 8 traveling rings; 1 platform spring-board; 1 batule board; rack-bars; single, double, and flying trapezes; l'échelle; peg-pole; 2 sets of chest-poles; a grip-machine; climbing-ropes, and pole; 5 mattresses; jumping and measuring standards, platform-scales; and all the apparatus that can be used for the practice of athletic sports indoors.

The gymnasium is open from 7 A.M. to 8.15 A.M., 12 M. to 2 P.M., and 5 to 6.45 P.M. The characteristic features of the gymnastic drill are Indian club exercise, with free exercises for the trunk and legs. The duration of the class drill is thirty minutes, including three rests of two minutes each. Two hours per day are devoted to individual and special exercise on apparatus, under the supervision of superintendent. The class exercises are also led by him.

The aim of the class exercise is to give a reasonable amount of exercise to the whole muscular system, so as to secure a symmetrical development, a healthy body, and a graceful carriage. It has been employed since 1869 to the present time, *i. e.*, 1884. From 1869 to 1876 exercise was required. At the latter date it was made optional, because the gymnasium was too limited in area, and the time allowed for exercise too short, to accommodate the increase in numbers.

In the autumn of 1884 the Indian club exercises and free-class gymnastics were made obligatory for students in the Freshman and Sophomore classes. The required exercises occupy thirty minutes each, four times weekly, from the first of November till the first of April. Mr. Goldie, after a continuous and successful service of fifteen years at Princeton, during which his pupils gained the reputation of being the most expert college acrobats in the country, has very recently assumed the charge of the gymnasium of the New York Athletic Club, whose magnificent new building, on the south-west corner of Sixth avenue and Fifty-fifth street, New York City, is by far the most complete of its kind in America.

STIMULATING INFLUENCE OF THE WAR ON PHYSICAL TRAINING.

The worth of a good physique and the educational value of physical training were most clearly demonstrated and sharply emphasized by the lessons of the late war. The unexampled interest and activity in athletic sports developed since the close of the War, have contributed most materially toward the promotion of physical training. The youth of the country have been led to engage more actively and intelligently in athletic sports than ever before. Collegiate and intercollegiate contests in great variety have attained to great prominence and favor in the estimation of the general public, as well as of the college world. The discussion of the question of athleticism in colleges will engage our attention in its proper place, but meanwhile the fact should be emphasized that the best that has been done during the last fifteen years toward the erection of gymnasia, the purchase and laying out of playing fields, and the organization of college departments of physical training, has resulted from the demands and endeavors and benefactions of the younger generation of college men, who have themselves experienced or witnessed the beneficial effects of gymnastic exercises and athletic games.

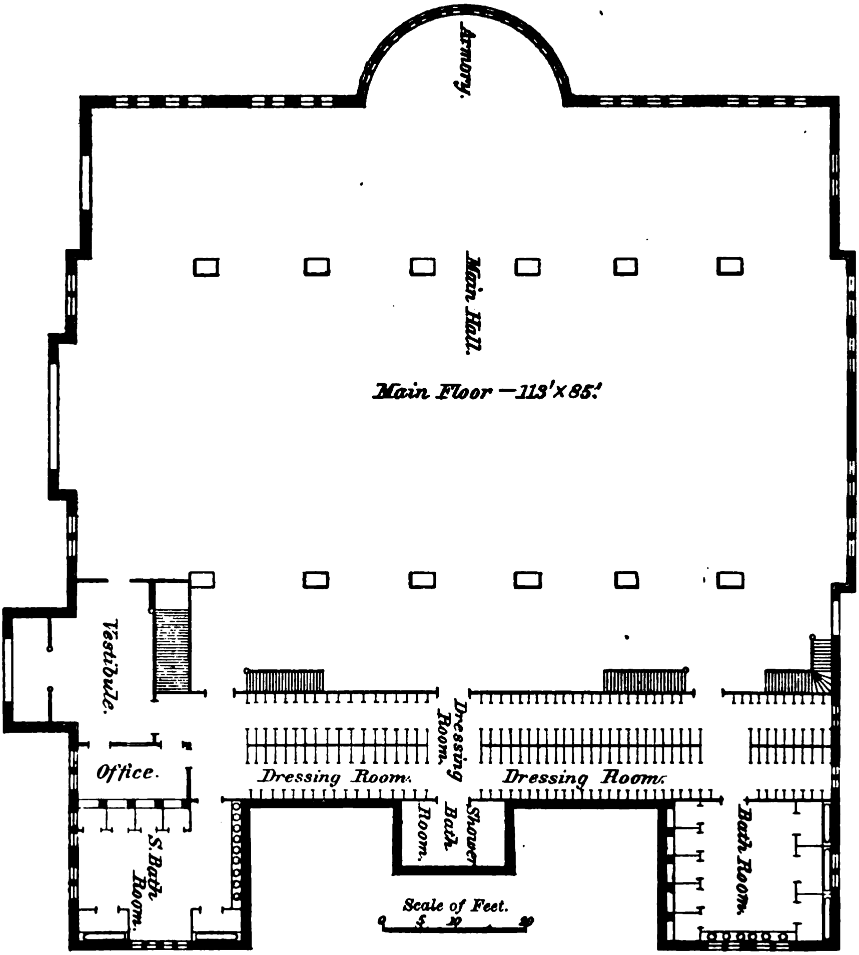
DEPARTMENT OF PHYSICAL TRAINING AT HARVARD UNIVERSITY.

Next to the athletic revival, the cause of physical education in America has received its greatest impetus, in recent years at least, from the organization by Harvard University in 1879 of a new department of physical training, in connection with the Hemenway Gymnasium, for whose erection and equipment Mr. Augustus Hemenway of Boston, a graduate of Harvard in 1876, gave the sum of $110,000. President Eliot, who had again and again pointed out the insufficiency of the old gymnasium, was a boating man in his day, and is still a bold rider and an enthusiastic yachtsman.

THE HEMENWAY GYMNASIUM.

The Hemenway Gymnasium was built according to the plans of Messrs. Peabody and Stearns, the well-known architects of Boston. Mr. Peabody was renowned as a successful athlete when a student at Harvard. Dr. D. A. Sargent, a graduate of Bowdoin College in 1875, and of the Yale Medical School in 1878, was appointed to take charge of the new department, with the title of Assistant Professor of Physical Training and Director of the Hemenway Gymnasium. The gymnasium was furnished with a full set of Dr. Sargent's developing appliances, and has ever since it was opened been managed in accordance with the system of training known as the Sargent system—a system, be it said, more comprehensive; practical, and scientific, than any hitherto attempted or adopted in any college.

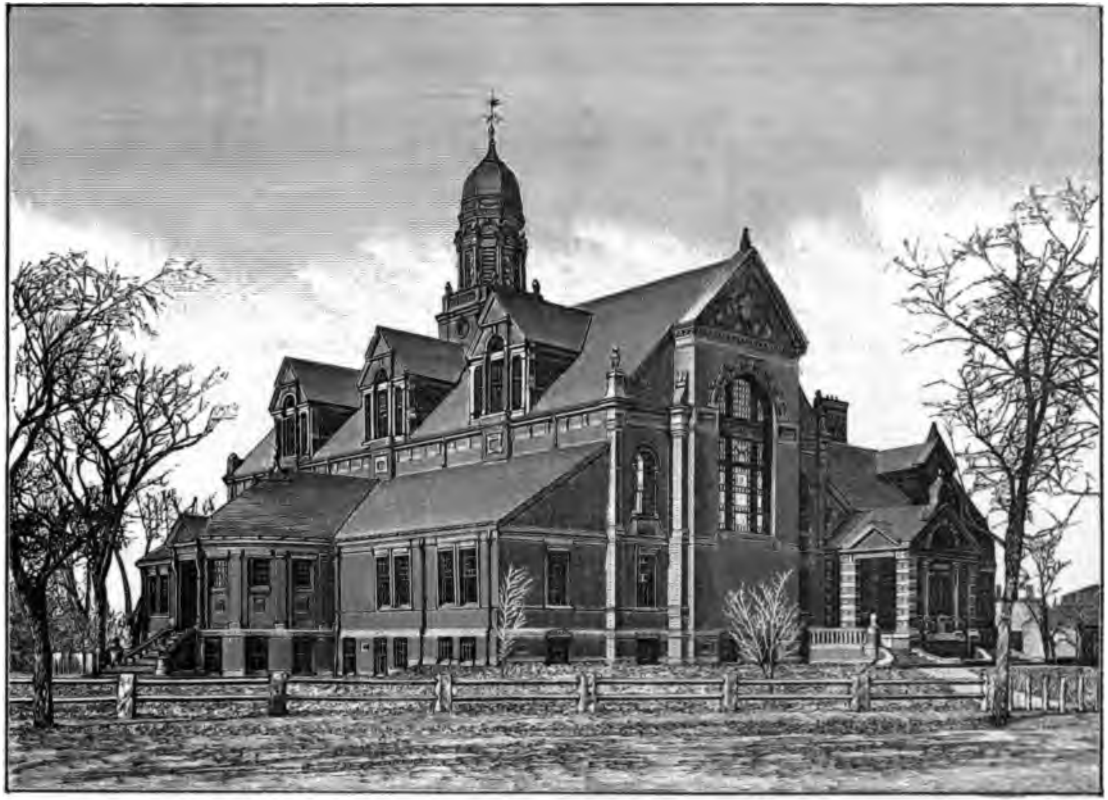
Dr. Sargent's reputation and success are due to his practical knowledge of athletics (he was a stroke oar and the most accomplished athlete of his day at Bowdoin); to his experience as a teacher of gymnastics at Bowdoin and at Yale and in New York City, before he went to Cambridge; and to his inventive genius, which enabled him to embody the results of his experience and his studies in the varied series of gymnastic machines which bear his name.



Ground plan of the Hemenway Gymnasium, Harvard University, Cambridge, Mass.

Description of the Building.

The following description, compiled from authentic sources, may serve to explain the views and ground plan of the Hemenway Gymnasium, as printed in this Report. The building, which is on the "Holmes Field," faces on Kirkland street, and is built of brick, with sandstone trim-



THE HEMENWAY GYMNASIUM.

mings, in the colonial style of architecture. The roof is covered with red slate, and is surmounted by a cupola, the top of which is 98 feet from the ground. The building is 125 feet long by 113 feet wide. Over the main window, fronting on Kirkland street, the coat-of-arms of the college is carved in freestone. The main entrance is by way of an elaborate porch. There is an outer and an inner vestibule. From the latter is a flight of stairs, made of North river bluestone, with iron balusters. On the right is an office, 12 feet by 15, finished with enameled bricks. Opening from this is the dressing-room, 103 feet by 15, containing several hundred lockers, through which steam-pipes pass for drying the clothing. On the same, or east side of the building, there are 2 bath and toilet rooms, 25 by 30 feet each, and between them is a room, 10 feet by 12, arranged for vapor and needle baths, with appliances for giving a lateral, vertical, and descending shower. Three doors open from the west side of the dressing-room into the main hall, over which extends an iron framework, arranged with sliding eye-bolts and beams, so that the swinging apparatus can be suspended from any point. On the left-hand side of the hall is an apartment for developing apparatus and a semi-circular room intended for an armory. The main hall is very elegant, the walls being of red and yellow bricks, and the wood-work of hard pine. It is 113 by 85 feet, with an open roof, having hard pine, open-timbered trusses resting on large brackets.

On the second floor there is a room, 25 by 30 feet, for the exhibition of trophies and for committee meetings; and a rowing-room, 70 by 20 feet, shut in from the rest of the building by a high wooden screen, and containing 16 rowing-machines. At the level of the second floor a gallery, 5 feet wide, that runs around the main hall, is used as a running-track. On this floor, above the north bath-room, are the director's office, 25 by 30 feet, and two examining-rooms, each 10 by 15 feet. In the basement at the north end is a room, 90 feet by 30, reserved for base-ball, lacrosse, and tennis practice, and inclosed by a heavy wire netting. In the basement are also the fencing-room, 25 feet by 30; the sparring-room, 25 feet by 30; the store-room, 25 feet by 25; the boiler-room, 15 feet by 20; the room, 15 feet by 25, containing the water-closets; some hundreds of lockers; and 8 bowling-alleys, 72 feet by 5. The whole building is heated by steam, and is ventilated by means of fly windows and a cupola.

Fittings of the Hemenway Gymnasium.

The cost of furnishing the Hemenway Gymnasium amounted to nearly $4,000. The fitting was done in accordance with Dr. Sargent's directions, very many of the appliances having been devised by him. Subjoined is a list of the apparatus of the Hemenway Gymnasium:

(1) *Heavy apparatus.*—Twelve mats; 2 vaulting bars; 3 horizontal bars, suspended; 3 pairs parallel bars, different sizes; 1 pair fixed flying rings; 2 pairs adjustable flying rings; 16 traveling rings; 2 double trapezes; 2 single trapezes; 3 flying trapezes; 1 bal-

ancing trapeze; 1 triple-barred échelle; 2 pairs hanging ropes; 2 knotted hanging ropes; 1 slack rope; 3 suspended poles; 1 spring board; 1 leaping board; 1 rope ladder; 2 peak ladders; 2 slanting ladders; 1 vertical ladder; 3 horizontal ladders; 2 plain vaulting stands; 2 adjustable vaulting stands; 1 jumping platform; 1 pole vaulting platform; 1 running platform.

The swinging apparatus is suspended from an iron framework, in which the cross-ties are adjustable and the eye bolts are made to move in grooves.

All the apparatus is so arranged that it can be pulled out of the way in a few moments, by a system of ropes and pulleys, thereby leaving the floor clear for class exercises.

(2) *Dr. Sargent's developing appliances.*—One foot machine; 1 ankle machine; 2 wrist machines; 1 foot rotating machine; 1 pronator machine; 1 supinator machine; 1 back and loins machine; 1 leg machine (chair form); 2 finger machines; 1 lifting machine; 2 extensor leg machines; 2 flexor leg machines; 1 abdominal machine; 1 head-balancing machine; 1 rowing machine (weight attachment); 18 rowing machines (hydraulic); 1 paddling machine; 2 sets inclined parallels; 2 sets vertical parallels; 2 sets traveling parallels; 1 pair balancing parallels; 1 adjustable ladder; 1 folding table; 1 peg pole; 4 chest expanders; 2 chest developers; 30 pairs chest weights (plain); 10 pairs chest weights (swivel pulley); 6 pairs back and side pulleys; 5 pairs high pulleys; 2 single, one-arm pulleys; 2 quarter circles; 2 traveling horizontal bars; 1 pair rack bars; 1 long inclined plane for chest and arms; 2 short inclined planes for lower extremities; 2 pairs treadles (weight attachment); 2 pairs stirrups (weight attachment); 2 bridles (weight attachment); 40 pairs Indian clubs (2½ to 8 pounds); 40 pairs wooden dumb-bells; 36 pairs iron dumb-bells (5 to 125 pounds); 40 wands.

(3) *Dressing and bathing facilities.*—Eight hundred and forty lockers; 5 tub-bath rooms; 9 sponge-bath rooms; 1 shower-bath room (needle, vertical, and lateral shower and douche); 12 wash-bowls; private bath-room (2 tubs and 2 bowls).

Bathing and dressing accommodations are inadequate, and a swimming-bath is contemplated.

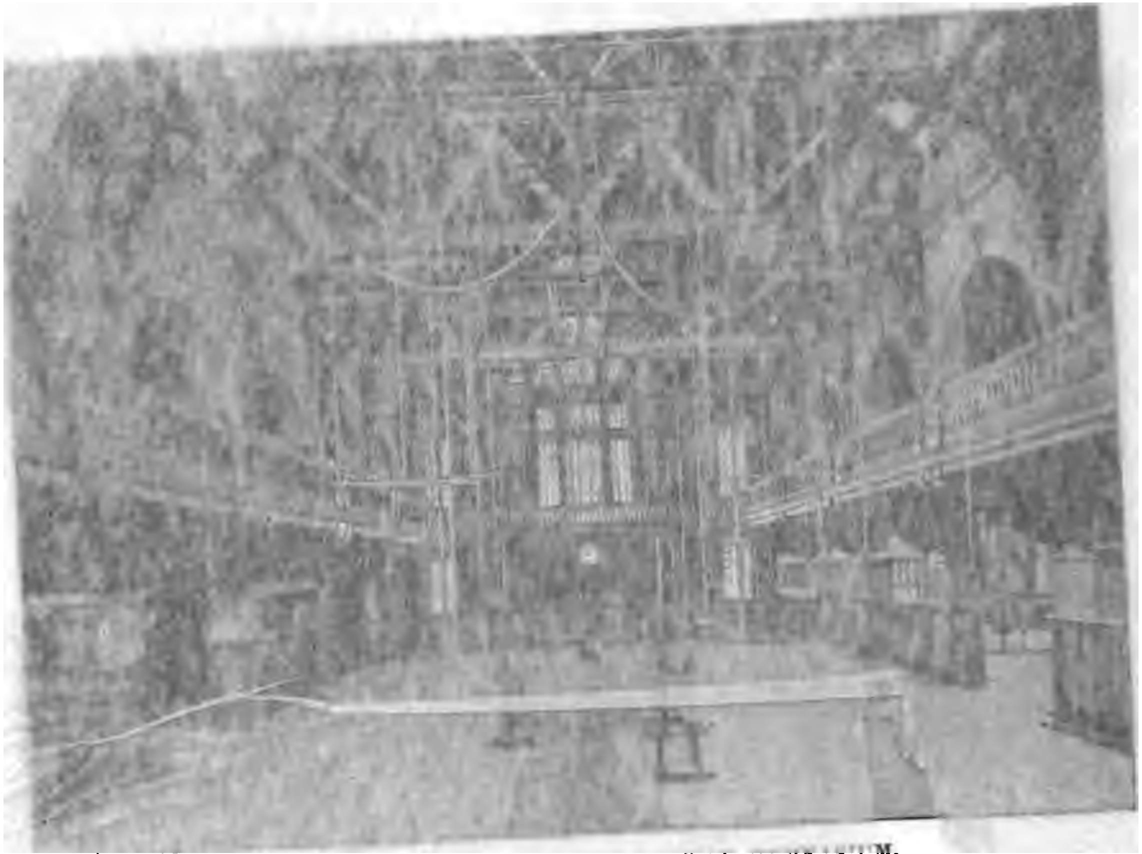
(4) *Measuring apparatus, etc., in examining room.*—One pair of scales; dynamometers, for testing strength of back, legs, arms, and chest; spirometer, for testing strength of lungs; spirometer, for testing capacity of lungs; bars and rings, for testing strength of various parts; measuring rods and tape.

The annual cost of carrying on the gymnasium is about $6,000, including the salary of the Director.

CONCERNING DR. SARGENT'S DEVELOPING APPLIANCES.

Dr. Sargent's remarks concerning the nature and purpose of the apparatus, together with his exposition of his method of physical training, are in point here:

The gymnasium, as a whole, is large enough, and has sufficient apparatus, to accommodate two hundred and fifty men at one time and allow each one all the room necessary; but if a run should be made on one kind of apparatus, although there are many duplicates, it would of course be impossible to meet it. A dressing-room, with lockers and bathing facilities enough to accommodate the whole university at one time, and give each man ample room, would require a building about twice the size of the present gymnasium, while the number of bowling-alleys demanded between three and five o'clock would more than cover the entire floor-surface of the building. Everything has been planned and arranged to meet the probable wants of the average student, and to satisfy the claims of the greatest number. Those who do nothing but bowl ought not to regard the rest of the apparatus as useless; nor does it become



INTERIOR OF THE HEMENWAY GYMNASIUM.

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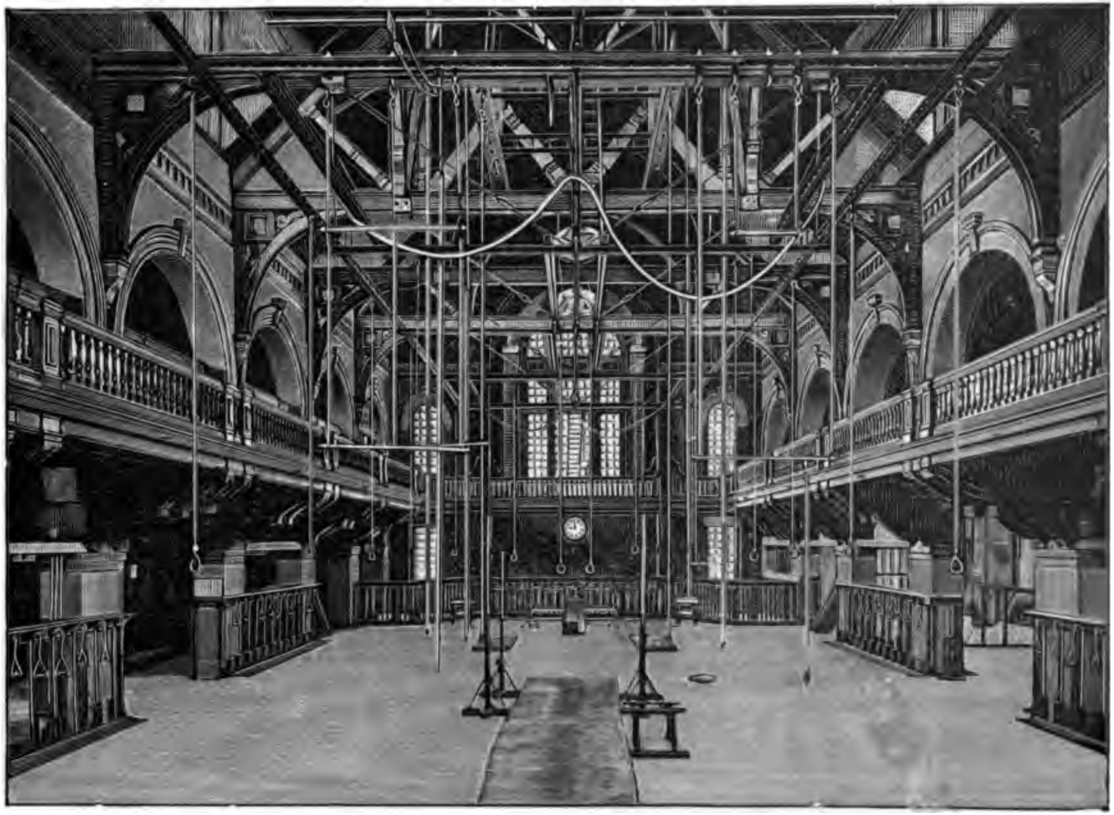

INTERIOR VIEW OF THE HEMENWAY GYMNASIUM.

those who aspire to athletic fame, to undervalue the importance of light gymnastics. Every one has a right to enjoy his favorite exercise; but before carrying it too far, it behooves him to consider whether he is not riding a hobby. What is the best exercise for one man may be the worst for another; and an attempt to pursue an inappropriate course, without regard to constitutional or organic differences, has often led to physical bankruptcy and ruin.

The old-fashioned gymnasia are filled with crude appliances that have been handed down in stereotyped forms for several centuries [*sic*]. To use this apparatus with benefit, it is necessary for one to have more strength at the outset than the average man possesses. A man must make use of that apparatus which his physical condition permits. If he has strength enough to lift with ease his own weight, well and good; then work on the heavy apparatus will prove beneficial to him; if he has not, the liability to strains and injuries, and the enormous expenditure of nerve-power necessary to keep his muscles up to their highest tension, more than counterbalance the good effect of the exercise. When it is considered that only one man in five can raise his own weight with ease, the need of introductory apparatus to prepare one for the beneficial use of the heavy appliances becomes quite apparent. It was the realization of this need that led to the invention of the numerous contrivances that have been introduced into the Hemenway Gymnasium; the desire to strengthen certain muscles, in order to accomplish particular feats on the higher apparatus, was the original motive of their invention. The results which followed were so satisfactory that the same appliances were afterward used as a means of attaining a harmonious development.

For this last-named purpose each machine has its own use. Each is designed to bring into action one or more sets of muscles, and all can be adjusted to the capacity of a child or of an athlete. There are in all fifty-six of these numbered appliances, twenty of which are duplicated. In order to make the gymnasium complete, all the old-style apparatus has been added, with improvements in form, structure, and arrangement. The pulley weights run on steel rods in wooden boxes. In many cases the radii of the rings, bars, etc., can be readily lengthened or shortened. The side rings are made stirrup-shaped, and are covered with rubber. The hand-ropes are made of cotton, and these, together with the hanging poles and flying rings, are all capable of adjustment. In order to protect the hands the ladder rungs are polished, and the horizontal section is divided into one, two, and four feet distances. The horizontal bars are centered with steel rods and hung from the iron framework by shipper wire. The vaulting bar is also centered with a steel rod, capped with brass, and pivoted two inches below the middle line. Considering the accidents that have occurred on this apparatus from "slatting," the above-mentioned improvement will be appreciated. The parallel bars have been shaped to the form of the hand, and one pair is adjustable. The spring boards, which in most gymnasia are so difficult to manage, have been placed on iron pedestals in gliding and pivoting sockets. This improvement facilitates the action of the boards and lessens their wear and tear.

Concerning the apparatus as a whole, it may be said that everything is arranged in a progressive series. It is possible for a person to pass from the simplest movement in calisthenics up to the most difficult gymnastic feat, without experiencing lameness for a day. Easy adaptation to the capacity of the individual and facility of application for remedying local defects and weaknesses are the distinguishing characteristics of the apparatus in the new Hemenway Gymnasium.

DR. SARGENT'S VIEWS ON EXERCISE.

The object of physical training with us is not to make men active and strong, as much as it is to make them healthy and enduring. Perfect health implies a condition in which all parts of the body are properly nourished and harmoniously developed—in which the vital organs are sound, well balanced, and capable of performing their functions to the fullest extent. The researches of the physiologists have shown that whenever a certain organ or class of organs becomes relatively too small or large, causing a want of balance or harmony in their action, there is in every case far greater liability to disease. It is in imperfect, ill-balanced organizations that we find the greatest amount of sickness, and the greatest number of incurable disorders. It is the weak spot, caused by inheritance, acquired by exposure, close confinement, overwork, etc., that invites disease and death, even though the rest of the system may be in perfect condition. To attain a perfect structure, harmony in development, and a well-balanced organism, is our principal aim.

In order to go about our work intelligently, we first take a number of body measurements, which are compared with a standard for the given age. We then test the strength of various parts, examine the heart, lungs, etc., and solicit as much of the student's history as will throw light on his inherited tendencies. From the data thus obtained a course of exercise is prescribed which is in every way designed to meet the demands of his particular case. Let us take a few illustrations:

No. 1 has a flat chest and is predisposed to consumption. If he is admitted to a gymnasium and left to his own discretion, the chances are that he will exhaust his vital energy in going from one thing to another before he has given his lungs and chest the special attention which they need. His wants are best subserved by specifying the work most suitable for him, and by adopting the apparatus best adapted to his peculiar condition.

No. 2 has a weak, irregular heart and poorly-developed back and legs. Systematic rowing and running at a slow pace are admirably adapted for toning up the heart and strengthening the muscles of the back and legs, and are prescribed as special exercises with limitations.

No. 3 is nervous and excitable, inclined to do everything at a breakneck speed, thereby drawing upon the very power which it is for his interest to conserve. In this case a list of exercises is prescribed which are calculated to deaden nervous sensibility by increasing muscular strength.

No. 4 is bilious or lymphatic, and is given the opposite course from that prescribed for No. 3; and so on.

Where the muscular system only needs development, the pupil is directed at first to those appliances which are designed to strengthen his weak parts. After he has become more symmetrical his exercises are made more general. For the benefit of those who simply need exercise without special training, a number of appliances have been introduced, which are so constructed that they can be readily adjusted to the "strength of the strong and the weakness of the weak." No long instruction is needed to make this apparatus available. It is only necessary to explain the desired movements once, and the results which follow will tell how well they have been carried out. Besides the developing appliances we have a great variety of swings, bars, ladders, etc.; but before the student is allowed to use them he must give evidence of a certain amount of preparatory training.

This, in short, is the system pursued at Harvard, where there is no systematic instruction, and where, after an order of exercises has been once prescribed, everything is left to the option of the student. How well the system works may be learned from an inspection of the gymnasium records, which are always open to the public. The second examinations show results which are very suggestive, if not a little startling. They have led me to conclude that half the young men who come to college are physically in arrears, *i. e.*, their brains have been developed at the expense of their physique. The rapid gain in health, strength, and size of students and professors (though more advanced in years) during the first three or four months of their gymnastic training can only be accounted for on this ground. Our best scholars fail for want of body, not for want of brain.

The chief characteristics, then, of the Sargent system of training, as originally introduced for educational purposes at Harvard, are—

(1) It is based on a careful physical diagnosis.

(2) Exercise, diet, etc., are prescribed in each individual case in the light of such diagnosis.

(3) Besides the ordinary light and heavy gymnastic appliances, machines designed to produce definite localized effects in development can be employed to insure symmetry, and to remedy specific defects or departures from the normal standard of strength or development.

NATURE OF PHYSICAL EXAMINATION.

With the exception of some slight modifications of detail, made to suit the convenience or peculiar notions of certain examiners, the following course of procedure is followed in examining individuals, male or female, under the system:

(*a*) The person to be examined fills out the following "history blank" in his own handwriting:

Name,
Class and department, or occupation,
Age, Birthplace,
Nationality of—
  Father,
  Mother,
  Paternal grandfather,
    " grandmother,
  Maternal grandfather,
    " grandmother,
Occupation of father,
If parents are dead, of what did they die?
Which of your parents do you most resemble?
Is there any hereditary disease in your family?
Is your general health good?
Have you always had good health?
Have you ever had any of the following diseases:
  Asthma,
  Dizziness,
  Gout,
  Pleurisy,
  Palpitation of the heart,
  Pneumonia,
  Habitual constipation,
  Bronchitis,
  Dyspepsia,
  Rheumatism,
  Shortness of breath,
  Headaches,
  Varicose veins,
  Spitting of blood,
  Chronic diarrhea,
  Dysentery,
  Neuralgia,
  Jaundice,
  Piles,
  Liver complaint,
  Paralysis?
Have you ever had any injury or undergone any surgical operation?

(*b*) The examiner makes a series of measurements and tests in accordance with the following form, to determine the physical peculiarities as regards weight, height, development, strength, and condition of the person under examination. The results of this examination, which is made upon the naked man, are carefully recorded, according to the *metric system*, the strength being determined by dynamometers graduated to show kilograms of force:

ITEMS NOTED AND RECORDED.

- Number,
- Date,
- Age,
- Weight,
- Height,
  - of knee,
  - sitting,
  - pubes,
  - navel,
  - sternum,
- Girth of head,
  - neck,
  - chest, full,
  - chest, repose,
  - belly,
  - hips,
  - right thigh,
  - left thigh,
  - right knee,
- Girth of left knee,
  - right calf,
  - left calf,
  - right instep,
  - left instep,
  - upper right arm,
  - upper left arm,
  - right elbow,
  - left elbow,
  - right fore-arm,
  - left fore-arm,
  - right wrist,
  - left wrist,
- Breadth of head,
  - neck,
  - shoulders,
  - waist,
  - hips,
  - nipples,
- Right shoulder elbow,
- Left shoulder elbow,
- Right elbow tip,
- Left elbow tip,
- Length, right foot,
  - left foot,
- Stretch of arms,
- Capacity of lungs,
- Strength of lungs,
  - back,
  - legs,
  - upper arm,
  - fore-arm,
- Total strength,
- Development,
- Pilosity,
- Color, hair,
  - eyes.

(*c*) After comparing the results obtained by the above-mentioned tests and measurements with the standards for average healthy persons of the age given, and taking into consideration any functional or structural peculiarities which his observations or questions may have brought to light, the examiner makes his prescription regarding exercise, diet, sleep, air, bathing, clothing, &c. For the sake of convenience this prescription is frequently given in the shape of a small handbook or card, so marked by the examiner that the person receiving it is plainly directed as to the regimen he had best follow. Re-examinations are made and prescriptions are repeated or modified from time to time, according to the nature of the case.

The system of measurements above described has superseded at Amherst College that originally introduced there by Dr. Hitchcock. Dr. Sargent and his followers, including several women trained under his direction, have accumulated a great and growing mass of anthropometrical data, which cannot fail to be of value in determining the physical constants of growing males and females, especially of the student class. It is to be hoped that these data may soon be available for publication and discussion.

The subjoined tables, already published, No. 8 by Dr. Sargent, and Nos. 7, 9, and 10 by Dr. Hitchcock, are of interest in this connection.

TABLE NO. 7.—*Measures of the weight, height, chest girth, arm girth, lung capacity, and pull up, of 7,988 students of Amherst College, gathered between the academic years of 1861-'62 and 1884-'85, inclusive, noted in the English and in the metric system, and arranged and averaged by age.*

	Age of the students.									
	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.
Number of students measured at each year	20	390	1,822	1,452	1,478	1,251	867	589	382	237
Weight in pounds and decimals	123.42	128.73	131.09	133.13	134.99	136.37	137.61	138.95	140.33	142.34
Weight in kilos and tenths	56.1	58.5	59.6	60.5	61.3	61.9	62.5	63.1	63.8	64.7
Height in inches and hundredths	66.70	66.77	66.95	67.12	67.47	67.50	67.58	67.70	67.77	67.90
Height in meters and millimeters	1.695	1.697	1.700	1.709	1.714	1.716	1.720	1.721	1.722	1.726
Chest girth in inches and hundredths	34.20	34.23	35.42	35.43	35.63	35.92	36.29	36.75	37.36	37.40
Chest girth in millimeters	868	870	895	896	905	918	926	934	940	947
Arm girth in inches and hundredths	10.60	11.06	11.23	11.40	11.58	11.65	11.74	11.94	11.96	11.98
Arm girth in millimeters	268	280	285	290	295	298	300	303	304	305
Lung capacity in cubic inches	225	220.9	239.3	244.1	250.4	254	256.9	260.5	263	265
Lung capacity in liters	3.68	3.80	3.97	4.02	4.11	4.18	4.20	4.28	4.30	4.36
Pull up, number of times	8.58	9.42	10.06	10.18	10.17	10.26	10.26	10.26	10.26	10.27

TABLE NO. 8.—*Strength and development of the First Ten, according to the tests made at the*

**NOTE.—The items marked with an asterisk (*) are the girths whose sum is taken as total develop-
the average girth of the right and left fore-arms is employed in computing total development. When
"total strength" is less than the "total development," it is marked minus. L. S. stands for law
age is not printed, the previous record has been accepted as entitling the person to a position among**

	Name and class.	Age.	Weight.	Height.	Head.*	Natural chest.*	Inflated chest.*	Waist.*	Right thigh.*	Left thigh.*
	1880.									
1	F. D. Jordan, 1880	23	73	175.7	57	95	105	78	54	54
2	Walter Trimble, L. S.	23	70	176.4	56	89	100	76	54	54
3	Richard Trimble, 1880	21	74.6	182.3	57.3	92	99	78	56	55.5
4	N. J. Stephens, 1881	22	72	177.2	53.5	93	101	76	54	53
5	R. W. G. Welling, 1881	21	80.2	188.1	57	92	99	73	56	56
6	C. H. W. Foster, 1881	20	60.9	175.9	55	91	98	70	55	54
7	James Otis, 1881	21	84	182.3	58	100	108	85	60	60
8	F. B. Keene, 1880	24	66.7	172.4	57	90	100	74	51	51.5
9	S. W. Skinner, 1880	22	72	169.5	56.5	90	100	78	50	59
10	G. B. Morison, 1883	19	68.3	179.4	54.5	90	95	70	52	51
	Average	21.6	72.2	177.9	56.2	92.2	100.5	75.8	55.1	54.8
	1881.									
1	C. H. W. Foster, 1881	21	68.2	176.5	55.5	98	105	72	56	55
2	R. S. Codman, 1883	19	72.2	174.2	57.3	97	103	76	57.5	55.5
3	E. D. Brandegee, 1881	23	77.5	176.2	58.4	98	106.5	83	57	56.5
4	C. P. Curtis, 1883	20	68.5	178	58	90	94	75	53	53
5	N. J. Stephens, 1881	......	72	177.2	53.5	93	101	76	54	53
6	R. W. G. Welling, L. S.	......	80.2	188.1	57	92	99	73	56	56
7	G. B. Morison, 1883	20	71	179.4	55.7	89	96	73	55	54
8	James Otis, 1581	......	84	182.3	58	100	108	85	60	60
9	J. A. W. Goodspeed, 1884	21	64.5	165	54.5	85	96	73	50	50
10	O. J. Pfeiffer, M. S.	23	81.2	182	58.5	95	104	84	57	56.5
	Average	21.1	73.9	177.9	56.6	93.7	101.2	77	55.5	54.9
	1882.									
1	C. P. Curtis, 1883	21	69.5	178	57.8	94	98	73	52.5	52.3
2	James Otis, L. S	23	85.5	183	58	105	113	86	59	59.5
3	H. L. Smyth, 1883	20	73	178.6	58	96	102	78	54.5	54
4	W. S. Bryant, 1884	21	65.5	180	55.5	92	97	71	52	52
5	A. R. Crane, 1885	21	64.8	169.3	56.5	92	97	76	53.5	53.5
6	W. H. Page, 1883	21	69.5	169.5	56.5	90.5	94.5	77	56	55.5
7	L. A. Biddle, 1885	19	66.6	172	58.5	95	99.5	74	54	53.5
8	G. B. Morison, 1883	21	71.5	179.5	55.7	93	96.5	73	55	55
9	R. M. Bradley, 1882	21	66.2	177	59	88	93	75	51	51
10	John Russell, 1882	21	62.1	172.4	57.7	86.5	97	72	51	52
	Average	20.9	69.4	175.9	57.3	93.2	98.7	75.5	53.8	53.8

Hemenway Gymnasium, Harvard University, during the years 1880, 1881, 1882, 1883, *and* 1884.

ment. As the average strength of the right and left hands is used in computing the total strength, so the "total strength" exceeds the "total development," the "condition" is marked plus. When the school; M. S. for medical school. The measurements are according to the metric system. Where the the First Ten.

Right arm.*	Left arm.*	*Average of—		Development.	Strength.					Total strength.	Condition.	
		Right fore-arm.	Left fore-arm.		Lungs.	Back.	Legs.	Arms and chest.	Fore-arm.			
30.5	30	27.5	27	531	40	145	230	175.2 $\binom{12}{12}$	85	675.2	144.2	1
35	35	27.5	27	526.5	25	155	200	224 $\binom{17}{15}$	70	674	147.5	2
33	32.5	27.8	27	531.1	20	159	185.5	223.8 $\binom{19}{11}$	75	663.3	132.2	3
34	32	29	28	525.5	22	170	190	194.4 $\binom{15}{12}$	86	662.4	136.9	4
32	33	28	29	526	25	175	220	160.4 $\binom{10}{10}$	80	660.4	134.4	5
31.5	31	28	27	513.5	22	162	197	182.7 $\binom{17}{13}$	90	653.7	140.2	6
36	36.5	30.8	30.8	574.3	30	170	178	210 $\binom{15}{10}$	59	647	72.7	7
33	31.5	28	27.5	516	25	131	186	233.4 $\binom{20}{15}$	68	643.4	127.4	8
35	35	28.5	27	541	23	160	167	223.2 $\binom{18}{13}$	67	640.2	99.2	9
32	31	27	26	502.5	20	160	165	232.2 $\binom{20}{14}$	55	632.2	129.7	10
33.2	32.7	28.2	27.6	528.7	25.2	158.7	191.8	205.9 $\binom{16.3}{12.5}$	73.5	655.2	126.4	
32	31	27.5	26.5	532	37	168	230	286.4 $\binom{25}{17}$	80.5	801.9	269.9	1
34.5	33.5	28.3	28	542.6	29	165	175	267.1 $\binom{25}{12}$	61	697.1	154.5	2
36	36	29.8	28.5	561.2	25	180	215	193.7 $\binom{12}{13}$	80	693.7	132.5	3
31.5	30	28.5	28	513	30	150	175	274 $\binom{25}{15}$	61	690	177	4
34	32	29	28	525.5	22	170	190	194.4 $\binom{15}{12}$	86	662.4	136.9	5
32	33	28	29	526	25	175	220	160.4 $\binom{10}{10}$	80	660.4	134.4	6
33.5	33	28.5	28	517.7	20	150	180	255.6 $\binom{22}{14}$	54	659.6	141.9	7
36	36.5	30.8	30.8	574.3	30	170	178	210 $\binom{15}{10}$	59	647	72.7	8
30.5	30	26	25.5	495	26	154	195	193.5 $\binom{15}{15}$	63	631.5	136.5	9
32.5	32.5	30	29.8	550	25	160	175	194.9 $\binom{12}{12}$	71	625.9	75.9	10
33.[illegible]	32.7	28.6	28.2	533.7	26.9	164	193.3	223 $\binom{17.6}{13}$	69.5	676.9	143.2	
32.5	32	29	28.5	521.1	18	250	425	326.6 $\binom{30}{17}$	66	1085.6	564.5	1
38.5	39.5	32	31.8	590.5	27.5	230	375	222.3 $\binom{16}{10}$	65	919.8	329.3	2
34.5	35.5	29	28	541.5	20.5	240	275	270.1 $\binom{23}{14}$	65.5	871.1	329.6	3
31.5	32	28.5	28	511.5	18	200	325	229.2 $\binom{22}{13}$	60	832.2	320.7	4
35.5	33.5	27	26.5	524.5	20	210	300	226.8 $\binom{20}{15}$	67.5	824.3	299.8	5
34	34	28.5	28.5	526.5	13	175	290	278 $\binom{26}{24}$	60	816	289.5	6
31	30	27	27	522.5	20	225	300	199.8 $\binom{15}{15}$	58	802.8	280.3	7
33	32.5	28.5	28	522.2	21	210	270	243.1 $\binom{21}{13}$	56	800.1	277.9	8
31	30.5	26.5	26	505	22	200	260	258.2 $\binom{25}{14}$	59	799.2	294.2	9
31	30.5	26.5	26	504.2	21	220	370	124.2 $\binom{10}{10}$	62	797.2	293	10
33.2	33	28.2	27.8	526.9	20.1	216	319	237.8 $\binom{20.8}{14.5}$	61.9	854.8	327.9	

TABLE NO. 8.—*Strength and development of the First Ten, according to the tests*

	Name and class.	Age.	Weight.	Height.	Head.*	Natural chest.*	Inflated chest.*	Waist.*	Right thigh.*	Left thigh.*
	1883.									
1	C. P. Curtis, 1883	......	69.5	178	57.8	94	98	73	52.5	52.3
2	A. R. Crane, 1885	22	64.5	169.3	57	95.5	101	76	52	53
3	G. B. Morison, 1883	22	71	179.8	56.5	94	100	72	53.5	53.5
4	H. L. Smyth, 1883	......	73	178.6	58	96	102	78	54.5	54
5	E. A. S. Clarke, 1884	21	87.6	181	57	102	106	87	62	62
6	F. A. P. Fiske, L. S	24	56.6	167.8	56.5	89	93	71	48	47.5
7	C. J. Hubbard, 1883	26	79.1	184.5	58	93	102	82	56	56
8	W. H. Page, 1883	22	66.2	169.5	56.5	90.5	96	73	56	55
9	W. S. Bryant, 1884	......	65.5	180	55.5	92	97	71	52	52
10	A. L. McRae, special	22	85.5	186	61	98	108	82	58	58
	Average	22.1	71.8	177.4	57.4	94.4	100.3	76.5	54.4	54.3
	1884.									
1	S. L. Foster, 1885	21	71.8	168.5	58	95	104	77	56	56.5
2	R. W. Boyden, 1885	21	73.2	172	57	97	104	77	56	56
3	R. S. Gorham, 1885	21	67.6	172.3	56.5	94	103	75	54	53
4	C. P. Curtis, L. S	......	69.5	178	57.8	94	98	73	52.5	52.3
5	Arthur Keith, 1885	19	76.5	176	57	98	103	81	57	57.5
6	T. C. Bachelder, L. S	23	69.2	171	58.5	102	107	80	57	55.5
7	A. R. Crane, 1884	......	64.5	169.3	57	95.5	101	76	52	53
8	W. J. Bowen, 1887	23	71.7	172	56	95	100	76	57	57
9	E. A. S. Clarke, 1884	......	87.6	181	57	102	106	87	62	62
10	F. A. P. Fiske, L. S	......	56.6	167.8	56.5	89	93	71	48	47.5
	Average	21.6	70.8	172.8	57.1	96.1	101.9	77.3	55.1	55

made at the Hemenway Gymnasium, Harvard University, &c.—**Continued.**

Right arm.*	Left arm.*	*Average of—		Development.	Strength.					Total strength.	Condition.	
		Right fore-arm.	Left fore-arm.		Lungs.	Back.	Legs.	Arms and chest.	Fore-arm.			
32.5	32	29	28.5	521.1	18	250	425	326.6 $\binom{30}{17}$	66	1085.6	564.5	1
36.5	35.5	28	27.5	534.5	25	250	325	290.2 $\binom{26}{19}$	73.5	963.7	429.2	2
33	32	29	28	523.5	25	200	350	291.1 $\binom{25}{16}$	69	935.1	411.6	3
34.5	35.5	29	28	541.5	20.5	240	275	270.1 $\binom{23}{14}$	65.5	871.1	329.6	4
37	36.5	30.8	31	580.3	31.5	205	345	184 $\binom{10}{11}$	98	863.5	283.2	5
29.5	29	27	26.8	490.5	19	255	330	175.5 $\binom{15}{16}$	78.5	858	367.5	6
33.8	33.2	28	28	542	28.5	225	300	213.6 $\binom{16}{11}$	89	856.1	314.1	7
33.5	33.6	28.8	28.7	522.9	10.5	200	275	291.3 $\binom{25}{19}$	67	852.8	329.9	8
31.5	32	28.5	28	511.5	18	200	325	229.2 $\binom{22}{13}$	60	832.2	320.7	9
35	35	29.5	29	564.5	24	230	350	145.2 $\binom{9}{8}$	67	816.2	251.7	10
33.7	33.4	28.8	28.3	533.2	22.9	225.5	330	241.7 $\binom{20.1}{14.4}$	73.3	893.4	360.2	
38	37	29.8	29.5	551.3	20.5	270	375	531.3 $\binom{58}{16}$	76	1272.8	721.5	1
36	35	31.3	30.8	549.3	19	290	330	409.9 $\binom{40}{16}$	93	1141.9	592.6	2
36	34	31.5	29.5	537	15	240	400	371.8 $\binom{35}{20}$	72	1098.8	561.8	3
32.5	32	29	28.5	521.1	18	250	425	326.6 $\binom{30}{17}$	66	1085.6	564.5	4
34	33.5	29.5	28.8	550.5	32	300	360	252.4 $\binom{20}{13}$	84	1028.4	477.9	5
36.5	36	31	30	563.5	28	245	300	332.2 $\binom{30}{18}$	89	994.2	430.7	6
36.5	35.5	28	27.5	534.5	25	250	325	290.2 $\binom{26}{19}$	73.5	963.7	420.2	7
33.5	33	29	29	536.5	25.5	190	340	243.8 $\binom{17}{17}$	73.5	872.8	336.3	8
37	36.5	30.8	31	580.3	31.5	205	345	184 $\binom{10}{11}$	98	863.5	283.2	9
29.5	29	27	26.8	490.5	19	255	330	175.5 $\binom{15}{16}$	78.5	858	367.5	10
34.9	34.1	29.7	29.1	541.4	23.3	249.5	353	311.8 $\binom{28.1}{16.3}$	80.3	1018	476.5	

TABLE NO. 9.—*Bodily measurements of the students of Amherst College for the years* 1881–'82 *to* 1883–'84, *inclusive, averaged by years of age.*

[This table gives the average results of the study of 461 students during the past three years in the more than fifty measures and tests that are applied. They are grouped under the different years from 17 to 25, inclusive, and the results are given in kilograms, meters, and millimeters, except the "capacity of lungs," which is in liters, and the "chest strength," the unit of which is the bodily weight as raised in a "dip" and a "pull up."]

	Years of age.								
	17.	18.	19.	20.	21.	22.	23.	24.	25.
Weight	59.8	50.7	61.1	61.3	63.2	62.7	63.1	64.7	62.2
Height	1.71	1.70	1.71	1.71	1.72	1.71	1.72	1.72	1.72
Knee	472	466	469	464	477	474	480	467	473
Sitting	897	889	900	891	904	902	902	916	915
Pubes	869	857	858	844	863	860	863	847	857
Navel	1.02	1.00	1.02	1.01	1.02	1.02	1.02	1.01	1.02
Sternum	1.40	1.38	1.39	1.39	1.40	1.39	1.41	1.4	1.40
Girth:									
Head	568	568	568	569	575	572	575	572	573
Neck	337	341	348	350	354	351	358	356	357
Chest, full	887	903	923	922	935	933	934	942	925
Chest, repose	858	865	877	883	896	895	899	908	886
Belly	703	717	714	723	736	735	747	753	741
Hips	872	875	893	897	903	896	901	911	900
Thighs	501	501	512	513	523	513	525	527	509
Knees	356	354	355	356	357	355	358	358	357
Calves	337	340	344	346	351	346	345	360	345
Insteps	236	237	238	240	243	241	242	247	238
Right upper arm contracted	275	279	291	284	298	294	301	297	277
Upper arms	242	247	252	253	257	254	261	258	250
Elbows	244	243	246	248	251	248	253	254	247
Fore-arms	251	253	257	261	265	261	266	264	260
Wrists	163	162	162	163	166	166	167	107	164
Breadth:									
Head	152	152	153	153	155	154	156	155	155
Neck	106	106	107	108	109	107	109	108	110
Shoulders	414	428	425	428	435	441	437	438	423
Waist	247	247	258	258	256	259	259	266	260
Hips	319	321	325	324	329	323	330	332	326
Nipples	188	192	195	197	202	202	201	201	190
Shoulder elbows	372	367	367	369	375	371	376	378	370
Elbow tips	465	460	460	456	461	462	466	461	454
Length of feet	260	257	258	257	202	261	262	261	258
Stretch of arms	1.77	1.77	1.77	1.77	1.80	1.79	1.80	1.78	1.77
Horizontal length	1.73	1.72	1.72	1.72	1.73	1.73	1.73	1.73	1.71
Strength of lungs	10.0	13.0	13.5	13.0	12.0	12.0	12.6	12.0	10.7
of back	132	132	139	146	153	151	159	154	138
chest, dip	3.6	5.2	5.8	6.2	7.0	7.0	8.2	7.3	5.6
pull up	7.6	7.9	8.8	8.9	9.0	9.1	8.8	8.8	9.4
of legs	166	161	172	180	193	198	197	183	164
of fore-arm	33.9	34.8	36.1	38.4	40.0	39.9	40.9	40.7	37.1
Capacity of lungs	3.86	3.91	4.03	4.01	4.10	4.40	4.29	4.14	4.00
Pilosity	2.1	2.2	2.2	2.3	2.4	2.6	2.7	2.3	2.7
Number measured	47	100	90	97	50	30	26	11	10
Total	461								

TABLE NO. 10.—*Statistics of bodily growth and development secured from the class of 1884, in Amherst College, during junior and senior years.*

	Averages taken in 1882.	Averages taken in 1884.	Difference.	Largest individual measure.	Smallest individual measure.	Largest individual increase in two years.
Weight	60.5	62.4	4¼ lbs.	82.5	50.5	15 lbs.
Height	1.71	1.72	⅜ in.	1.86	1.53	1¼ in.
Sitting	918	921	⅛ "	1.00	820	1 "
Sternum	1.39	1.40	⅜ "	1.54	1.24	1 "
Girth:						
Head	568	578	⅜ "	615	541	1 "
Neck	347	356	⅜ "	400	320	1½ "
Chest, full	924	932	⅓ "	1.01	840	2½ "
Chest, repose	877	879	⅛ "	1.02	795	2½ "
Belly	710	739	¼ "	865	670	3 "
Hips	891	907	⅝ "	1.04	816	4 "
Thighs	508	526	¾ "	650	475	3½ "
Knees	353	363	⅜ "	415	322	1¾ "
Calves	342	351	⅜ "	406	312	1½ "
Insteps	240	239	1/25 "	270	212	¾ "
Contracted arm	290	296	¼ "	370	257	1¾ "
Arm at rest	253	256	⅛ "	346	220	1 "
Elbows	246	259	½ "	292	223	1¼ "
Fore-arms	258	266	¼ "	305	235	1 "
Wrists	161	165	⅛ "	185	152	⅛ "
Breadth:						
Head	154	154	0 "	170	143	¼ "
Neck	102	109	¼ "	122	98	⅛ "
Shoulders	426	437	⅜ "	488	411	2 "
Waist	252	257	⅕ "	293	230	¾ "
Hips	321	327	¼ "	379	294	1 "
Shoulder elbows	367	375	¼ "	419	337	1 "
Elbow tips	456	459	⅛ "	521	410	1¼ "
Length of feet	256	260	⅛ "	289	236	¼ "
Stretch of arms	1.77	1.79	¾ "	1.99	1.59	2¼ "
Horizontal length	1.72	1.74	¾ "	1.87	1.56	1¼ "
Strength	474	501	27	869	316	176

This is not presented as showing remarkably large results. These figures are not compared with the picked men, such as soldiers, sailors, sporting men, or the volunteer or paid gymnasts who are paraded to announce a system, a method, or a theoretical basis, but are the exact measurements of a whole class in Amherst College, taken with an interval of two years, with the sole object to show the growth and development in an "average lot" of young men between twenty years and six months and two years older, engaged in college study, discipline, and training.

In this table the first column of figures indicates the average measures of the class as taken in February, 1882, and the second column the same in February, 1884, both from 79 men. The data are all expressed in millimeters, except "weight," which is in kilograms, and "strength," which is an arbitrary datum constructed by multiplying the weight of the body into the indications of strength known as "chest tests," and added to the tests of the "back, legs, fore-arms, and lungs."

The third column gives the difference or increase between the two series, expressed in fractions of an inch.

The fourth column gives the largest individual measurements found in Februar 1884, and the fifth column the smallest of the same date.

The sixth column gives the largest individual increase gained in the two years.

The item of "height" is of interest, in that we see a slow and apparently small growth in two years. We, however, can very easily compare the results of the college students with those obtained by Dr. J. H. Baxter, Medical Purveyor, U. S. A., during the late civil war. His measurements were from 190,621 drafted and enlisted men, and those at Amherst from 1,806 students at college between 1861 and 1878.

	Years of age.								
	17.	18.	19.	20.	21.	22.	23.	24.	25.
	Inches.	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*	*Inches.*
Dr. Baxter	65.65	66.39	67.07	67.51	67.58	67.92	68.01	68.02	68.05
Amherst College	66.71	67.88	67.72	67.88	67.86	68.11	68.17	68.35	68.34

In both these tables we see a rapid increase from 17 to 20, and a slower and more uniform rate afterward.

The chest measure is large for the Senior age, it being 36.75 inches for the class of 1884, while the Senior average for 20 years has been but 35.97 inches.

The abdominal girth expresses a healthy growth either in the fat or well developed nutritive organs.

The increase of joints and muscles in both extremities is significant and symmetrical, and while the average arm girth increase (biceps) is .25 inch, and the largest individual increase is 1.75 inches, the development is shown in the test of strength, which has increased from 474 to 501, showing the greater hardening and compactness of the muscular fiber, a much more valuable acquisition than the greater girth.

Probably the brain acquires its full size early in life. This is corroborated by these results. The increase of head girth is three-eighths of an inch, and that of the breadth nothing.

These results go to show that the "stretch of arms" is more than the "perpendicular height," as is latterly admitted to be the true proportion of the body. The difference is more than two inches. That the finger-reach has increased three-quarters of an inch and the height one-half an inch, may show that the one maximum is gained before the other.

This study of these seventy-nine men is one of their unconscious additions to anthropology, and is their contribution to a knowledge of what constitutes the most complete manhood.

INSTITUTIONS THAT HAVE ADOPTED MORE OR LESS COMPLETELY THE SARGENT SYSTEM.

The gymnasia at the following named institutions have been wholly or partially furnished with Dr. Sargent's apparatus since 1879. Those in which his system of measurements and directions are employed are indicated by an asterisk (*).

[M. against the name of an institution indicates that it is for males; F., for females; M. and F., for males and females. A † indicates that the gymnasium is in charge of a regularly educated physician.]

1. *†Amherst College, Amherst, Mass. M.
2. * Boston University, Boston, Mass. M. and F.
3. *†Cornell University, Ithaca, N. Y. M. and F.
4. *† Harvard University, Cambridge, Mass. M.
5. *† Haverford College, Haverford, Pa. M.

6. *†Johns Hopkins University, Baltimore, Md. M.
7. *Lehigh University, South Bethlehem, Pa. M.
8. Massachusetts Institute of Technology, Boston, Mass. M.
9. *Nashville University, State Normal College, Nashville, Tenn. M. and F.
10. *National Deaf-Mute College, Washington, D. C. M.
11. *Smith College, Northampton, Mass. F.
12. *†Swarthmore College, Swarthmore, Pa. M. and F.
13. Tufts College, College Hill, Mass. M.
14. Wellesley College, Wellesley, Mass. F.
15. English High and Public Latin School, Boston, Mass. M.
16. Marlboro Street School, Boston, Mass. F.
17. Mount Vernon Street School, Boston, Mass. F.
18. Berkeley School, New York City.
19. Fifth Avenue School, New York City.
20. Dr. Brearley's School, New York City. F.
21. *†William Penn Charter School, Philadelphia. M.
22. Gunnery School, Washington, Conn. M.
23. St. Mark's School, Southborough, Mass. M.
24. High School, Providence, R. I. M. and F.
25. Siglar's Preparatory School, Newburg, N. Y. M.
26. Cook Academy, Havana, N. Y. M.
27. Willard's Academy, Saxton's River, Vt.
28. McLean Insane Asylum, Somerville, Mass. M. and F.
29. Cadets' Armory, Boston, Mass. M.
30. *†Hartford Theological Seminary, Hartford, Conn. M.
31. Theological Seminary, Princeton, N. J. M.
32. Newton Theological Institution, Newton, Mass. M.
33. *†Young Men's Christian Union, Boston, Mass. M.
34. Young Men's Christian Association, Baltimore, Md. M.
35. Young Men's Christian Association, Providence, R. I. M.
36. Young Men's Christian Association, Chicago, Ill. M.
37. Young Men's Christian Association, Washington, D. C. M.
38. Young Men's Christian Association, Lawrence, Mass. M.
39. Young Men's Christian Association, Bangor, Me. M.
40. *†Sanatory Gymnasium, Philadelphia, Pa. M. and F.
41. Sanatory Gymnasium, Providence, R. I.
42. *†Sanatory Gymnasium, Cambridge, Mass. F.
43. New York Athletic Club, New York City. M.
44. Olympic Athletic Club, San Francisco, Cal. M.
45. Montreal Athletic Club, Montreal, Canada. M.
46. Saint Louis Athletic Club, Saint Louis, Mo. M.
47. Rochester Athletic Club, Rochester, N. Y. M.
48. Norfolk Athletic Club, Norfolk, Va. M.

It is proposed to introduce the Sargent system of directed exercise into Vassar College, for women, at Poughkeepsie, N. Y., and the University of Vermont at Burlington, Vt. It has just been adopted for the new gymnasium of Lafayette College at Easton, Pa. The largest and best of the gymnasia belonging to a woman's college is that at Bryn Mawr College, Bryn Mawr, Pa. It will be opened probably in September, 1885, under the charge of a directress trained for the position by Dr. Sargent.

CONCERNING TEACHERS OF THE SARGENT SYSTEM.

So great is the demand for competent teachers of physical training that Dr. Sargent opened a school for teachers in the autumn of 1884, with an attendance of sixteen pupils.

The following circular sets forth the nature, aims, and methods of the Physical Training School for Teachers, corner of Church and Palmer streets, Cambridge, Mass.:

Within the past few years the demand for competent teachers in physical training has been so great that salaries ranging from one to three thousand dollars a year have been offered to those that are capable of filling the desired positions.

Most of the applicants for these places have been poorly qualified, both mentally and physically, for the work that was expected of them, and they have failed to meet the requirements of the position for want of a proper preparatory training.

The numerous requests that I have received for teachers trained in accordance with the Harvard system have induced me to open a school for this purpose.

The object of this school will be to drill pupils in the theory and practice of physical training, and to prepare them to teach in this much neglected branch of education.

Course.— The course will extend over two years. Medical graduates and those that are prepared to pass a satisfactory examination in the preliminary work will be required to attend only one year.

Applicants.— All applicants must have good health, a sound physique, and have had the advantages of at least a common school education.

Course for first year.— Believing that all teaching should be preceded by inquiries into the "nature, capabilities, and requirements of the being to be taught," the fundamental principles of anatomy and physiology will form the basis of the first year's work.

The studies in these branches will be supplemented by such studies in biology, zoölogy, chemistry, and physics, as are necessary to understand the laws of health, growth, and development.

Practice for the first year.— The practice for the first year will consist of special exercises for the development of the teacher:—Massage, free movements, calisthenics, light gymnastics—the last including wooden and iron dumb-bells, wands, and Indian clubs; chest weights, class exercises, voice training, and introductory exercises on the heavy apparatus; practical carpentry, the art of splicing, serving, and knotting ropes, and the mechanical working of the gymnasium; what to do in case of emergencies.

Course for second year.— The studies for the second year will consist of inquiries into the relation of body and mind:—The conservation of energy, animal mechanics, mental hygiene from the physical basis, anthropometry and the laws of form and proportion, vital statistics, semeiology, physical diagnosis; the hygiene of occupations and of schools; natural heritage; variations in exercise, food, sleep, bathing, clothing, and climate, considered as to their mental and physical effects upon different constitutions; the analysis of sports, games, and educational exercises; the relation of the organism to the structure, the structure to the individual, and the individual to the public; the science and art of teaching.

Practice for second year.— The practice for the second year will consist of class exercises with bar bells, chest weights, and Indian clubs, marches, the organization of classes and the division into squads, school work, athletic sports, heavy gymnastics, practice with the dynamometers; the application of developing appliances for the relief of natural weaknesses; the adaptation of exercise and training to individual needs; practice in teaching.

Reading course.— Special arrangements will be made with those who desire to take the reading course at home, though attendance at the gymnasium is advised.

Summer course.— For the benefit of all that are engaged in teaching throughout the year, a course of reading and practice will be prescribed, and a summer course of lectures, examinations, and exercises will be given.

Equivalents.— A good physique, fine muscular development, proficiency in physical exercises, and experience in teaching, will be accepted as equivalents for a certain amount of time.

Certificates.— In every case the applicant must pass a satisfactory examination in all of the work prescribed, and have taken a medical degree from a medical school in good standing, in order to receive a full certificate.

In other cases certificates will be given indicating the time spent at the school, the work done, and the nature of the service that each teacher is capable of performing.

Sessions.— The course will be open to men and women, but the physical exercises will be conducted in different gymnasia. The gymnasium for women will be in Cambridge, the gymnasium for men in Boston.

The winter session will begin November 1, and continue until June 1. The summer session will begin the first Monday after July 4, and continue five weeks.

Terms.— For season ending June 1, 1885: One-half course in theory and practice, $100; one-half course in reading, prescribed, $50; one-half course in summer practice, ending second week in August, $50.

In no case will a summer course be given unless preceded by a reading course extending over six months. All payments made in advance. For further particulars address—

D. A. SARGENT, M.D.,
Cambridge, Mass.

THE NUMBER AND COST OF COLLEGE GYMNASIUM BUILDINGS IN THE UNITED STATES.

In passing to consider the number and cost of the college gymnasia erected and fitted since those of Amherst, Harvard, and Yale were built in 1860, we may note that to Princeton College, probably, belongs the honor of having the first college building devoted exclusively to gymnastic purposes. This embryo structure, if we may be allowed the term, as befits an embryo, was a very small affair, and owed its existence to the zealous endeavors of a few students of the college in 1856. It was a small "single-boarded structure of wood," and was painted red, "that," as its historian tells us, "it might resist the storms of heaven as its founders had resisted the objections of an unpropitious Faculty." It remained "a stoveless shanty" till 1860, when a stove and a new set of apparatus were put into it. In 1865, during the summer vacation, the people of the town reduced it to ashes, on account of a report that a tramp sick with yellow fever had slept in it over night.

The era of gymnasium building which opened in 1860 may be conveniently divided into three periods, viz.: first period, 1859-'60 to 1870, inclusive; second period, 1871 to 1880, inclusive; third period, 1881 to the present writing, February, 1885.

FIRST PERIOD.

Institution with which gymnasium is connected.	When built.	Cost.	
(a) Institutions for superior instruction.			
Amherst College, Massachusetts	1859-'60	$15,000	
Dartmouth College, New Hampshire	1866	24,000	
Harvard University, Massachusetts	1860	10,000	
College of New Jersey (Princeton College), N. J	1869	38,000	
Washington University, Missouri	?	7,000	
Wesleyan University, Connecticut	1863	5,000	
University of Wisconsin, Wisconsin	1868	5,000	
Yale College, Connecticut	1860	13,000	
Pennsylvania College, Pennsylvania	1870	3,000	120,000
(b) Institutions for secondary instruction.			
Claverack College and Hudson River Institute, New York	1861	6,000	
West Newton English and Classical School, Massachusetts	1860	500	
Williston Seminary, Massachusetts	?	[1] 20,000	26,500
Total for the first period			146,500

Williams College, Massachusetts, and Bowdoin College, Maine, for young men, and Vassar College, for women, in New York, each fitted up a gymnasium during this period, in a building since devoted to other purposes.

SECOND PERIOD.

Institution with which gymnasium is connected.	When built.	Cost.	
Institutions for superior instruction.			
Beloit College, Wisconsin	1874	$5,000	
University of California, California	1878	12,000	
Harvard University, Massachusetts	1879	110,000	
Smith College, Massachusetts	1880	4,000	
Vanderbilt University, Tennessee	1879	22,000	
Newton Theological Institution, Massachusetts	1876	4,000	
Hartford Theological Seminary, Connecticut	?	[1] 8,000	
Total for the second period			165,000

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[1] Estimated.

THIRD PERIOD.

Institutions with which gymnasium is connected.	When built.	Cost.
(*a*) *Institutions for superior instruction.*		
Amherst College, Massachusetts	1883–'84	$65,000
Bryn Mawr College, Pennsylvania	1884	18,000
Cornell University, New York	1882–'83	40,000
Dickinson College, Pennsylvania	1884	8,000
Johns Hopkins University, Maryland	1883	10,000
Lafayette College, Pennsylvania	1884	15,000
Lehigh University, Pennsylvania	1882	40,000
Massachusetts Agricultural College, Massachusetts[1]	1883	6,000
University of Minnesota, Minnesota[1]	1884	34,000
Nashville University, State Normal College, Tennessee.	1884	5,500
National Deaf-Mute College, District of Columbia[2]	1881	14,600
Tufts College, Massachusetts	1882–'83	10,000
University of Wooster, Ohio	1882–'83	4,200
(*b*) *Institutions for secondary instruction.*		
Shattuck School, Minnesota	1880	20,000
Total for third period		290,300
Total for second period		165,000
Total for first period		146,500
Grand total		601,800

CONCERNING SCHOOL AND COLLEGE GYMNASIA NOT OCCUPYING AN ENTIRE BUILDING.

It is impossible, owing to meager returns to our inquiries, to state accurately the amount of money expended for buildings and apparatus by institutions not noted in the above lists; but we may safely "guess" that $150,000 have been expended since 1860 on the class of gymnasia under consideration, in addition to the $600,000 accounted for above.

Funds are either in hand or are being raised for gymnasia at Phillips Exeter Academy, New Hampshire; University of Michigan, Michigan; University of Pennsylvania, Pennsylvania; and Williams College, Massachusetts. New gymnasia are projected at the United States Military and Naval Academies.

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[1] Used at present for military drill.

[2] This is unique among our college gymnasia, as it contains, on the ground floor, a swimming pool, which is 40 by 26 feet, 6 feet deep at one end, sloping upward to a depth of 3 feet at the other.

TABLE No. 11, PART I.—*Statistics of the principal college and school gymnasia of the United States.*

NOTE.—Vital statistics are kept at the institutions marked *. L. G. indicates light gymnastics; H. G., heavy gymnastics; S. G., Sargent's gymnastics; Mil., military drill; Cal., calisthenics; ^{o}, optional; ^{r}, required; M. F., member of the Faculty.

	Institutions having a structure devoted to the purposes of physical training and personal hygiene.	Date of the erection, or fitting up of the building.	Cost of the building and its fittings.	Main material of the building.	Number of stories in the building.	Number of rooms in the building.	Dimensions of the main hall, in feet.	Kind of drill adopted.	Date of adoption of drill.	Number of hours' drill per week for individuals.
1	University of California, Cal	1878	$12,000	Wood	1	2	Octa'l, 80	L. G.^{o}; Mil.^{r}	1869	2
2	Wesleyan University, Conn	1863-'64	5,000	do	1	1	70 by 40			
3	Yale College, Conn	1859-'60	13,000	Brick	2 & cellar	4	110 by 60	L. G.^{r}; H. G.^{o}		
4	Northwestern University, Ill			do	2	6				
5	Johns Hopkins University, Md.*	1883	10,000	do	1 & annex 2½	6	90 by 40	S. G.^{r}	1883	
6	Amherst College, Mass.*	1883-'84	65,000	do	2 & basement	18	80 by 64	L. G.; S. G	1860	2
7	Harvard College, Mass.*	1879	110,000	do	2 & basement	16	113 by 90?	S. G.^{o}	1879	
8	Massachusetts Agricultural College, Mass.*	1883	6,000	Wood	2	4	120 by 60	Mil.^{r}	1867	3
9	Smith College, Mass	1880	4,000	do	2	4		L. G.^{r}; S. G.^{r}		2
10	Tufts College, Mass	1882-'83	10,000	Brick	1 & basement	4	90 by 45	S. G		
11	Carleton College, Minn.*	1883-'84					40 by 40			
12	University of Minnesota, Minn	1884	34,000	Wood	3	9	120 by 140	Mil.^{r}	1869(?)	
13	Shattuck School, Minn	1880	20,000	Stone	2 & cellar	9	34 by 60	Mil.^{r}; L. G.^{r}	1882	2
14	Washington University, Mo		7,000		1 & cellar		70 by 50	L. G.^{r}	1870	2
15	Dartmouth College, N. H	1866	24,000	Brick	2 & cellar	5	75 by 45	L. G.^{r}	1867	2 fr.; 1 soph.
16	College of New Jersey, N. J.*	1869	38,000	Stone	2 & cellar	4	78 by 52	L. G.^{o}; H. G.^{o}	1869	
17	Cornell University, N. Y.*	1882-'83	40,000	Brick	1 & annex 2	4	150 by 60	S. G.; Mil^{r}	S. G., 1884	3(?)
18	University of Wooster, O	1882-'83	4,200	do	1	1	48 by 96	L. G.^{r}		1½
19	Lafayette College, Penn.*	1883-'84	15,000	do	1 & basement	4	76 by 41	L. G.^{r}; S. G	1884	2
20	Lehigh University, Penn.*	1882	40,000	Stone	2 & cellar	8	75 by 45	S. G.^{r}; L. G.^{r}	1883	
21	Pennsylvania College, Penn	1870	3,000	Wood	1	1	50 by 90			
22	Univ. of Nashville State Nor. Coll., Tenn	1884	5,500	Brick	1	3	80 by 30	S. G	1884	
23	Vanderbilt University, Tenn	1879	22,000	do	1 & cellar	5	90 by 60	L. G.^{o}		open 6 hr's.

24	Beloit College, Wis	1874	$5,000	Wood	1	2	60 by 40	L. G	1874	2
25	University of Wisconsin, Wis	1868	5,000	...do	1	2	100 by 40	L. G.; Mil.	....	....
26	Nat. Deaf-Mute Coll., D. C.*	1881	14,600	B'k & w'd	2	3	62 by 48	L. G.[r]; S. G	1881	4

TABLE NO. 11, PART II.—*Statistics of the principal college and school gymnasia of the United States.*

NOTE.—Vital statistics are kept at the institutions marked *. L. G. indicates light gymnastics; H. G., heavy gymnastics; S. G., Sargent's gymnastics; Mil., military drill; Cal., calisthenics; •, optional; ʳ, required; M. F., member of the Faculty.

	Institutions having a structure devoted to the purposes of physical training and personal hygiene.	Students of whom drill is required.	Drill is in charge of—	Number of lockers in dressing-room.	Bathing facilities. *a* Bath-tubs *b* Bowls. *c* Shower-baths.	Number of— *a* Water-closets. *b* Urinals.	Items regarding play-grounds.	Remarks concerning the character and amount of the instruction given in anatomy, physiology, and hygiene.	Number of students in 1882-'83. (M., males; F., females.)
1	University of California, Cal	All able-bodied males	U. S. officer	60	*c* 2	*a* 1			143 M.; 72, F.
2	Wesleyan University, Conn		No instruction				Ball grounds	Lectures and recitations req'd	176 M.; 15 F.
3	Yale College, Conn	1st year men, 2d term	Special teacher	70	*a* 7, *b* 6, *c* 1	*a* 1, *b* 2 •			1,080 M.
4	Northwestern University, Ill								
5	Johns Hopkins University, Md.*	Candidates for B. A	Director, M. F	226	*a* 2, *b* 6, *c* 2	*a* 2, *b* 2	Clifton, 4 A	Lectures and text-book req'd	204.
6	Amherst College, Mass.*	All able-bodied	Director, M. F	270	*a* 12, *c* 6	*a* 2, *b* 3	2 to 3 A. (1881)	Req'd inst. given 1st and 2d yrs	352 M.
7	Harvard College, Mass.*		Director, Mil., M. F	(?)800			10 A		1,428. (?)
8	Mass. Agric. College, Mass	do	U. S. officer				Ball grounds		112 M.
9	Smith College, Mass		Instructress				Tennis courts		284 F.
10	Tufts College, Mass						Ball grounds		160 M.
11	Carleton College, Minn.*								175 M.; 155 F.
12	University of Minnesota, Minn		U. S. officer						146 M.; 77 F.
13	Shattuck School, Minn'	All boys	U. S. officer and special teacher.		8 baths	*a* 16, *b* 10	Ample play-grounds.	Anatomy, physiology, and hygiene are required studies.[1]	
14	Washington University, Mo	1st and 2d year males	Special teacher	60	Small	*a* 3, *b* 5	Yard 100 x 100 ft	Lectures required	880 M; 420 F.
15	Dartmouth College, N. H	do	Tutor in math			*b* 1	Village Green	Lectures, optional and req'd	339 M.
16	College of New Jersey, N. J.*		Director, Sup't	221	*b* 6, *c* 3	*a* 1, *b* 1	Ath. grounds	Lectures required	500 M.
17	Cornell University, N. Y.*	do	Director, M. F.; U. S. officer.	285	*a* 6	*a* 2, *b* 1	Ample grounds		407.
18	University of Wooster, O		Class leaders				Ample grounds	Lectures required	395 M.; 161 F.
19	Lafayette College, Penn.*	All classes	Medical director						
20	Lehigh University, Penn.*	All students	Director, M. F	246	*a* 10, *b* 2, *c* 1 ʳ	*a* 3, *b* 6		Lectures required	249 M.
21	Pennsylvania College, Penn								150 M.

22	Univ. of Nashville State Nor. Col., Tenn.		Special teachers		Some	Some		Entrance examination includes anat., phys., and hygiene.	70 M.; 92 F.
23	Vanderbilt University, Tenn		A student		a 5	b 6	Ample grounds	Lectures elective	480 M.; 7 F.
24	Beloit College, Wis	All students	U. class leaders						222 M.
25	University of Wisconsin, Wis		Class leaders				Ample grounds	Lectures elective	314.
26	Nat. Deaf-Mute Col., D. C.[1]	All male students	Director, M. F. (?)		Swim'g b'th		Ball grounds		51 M.

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[1] In 1882-'83 all candidates for admission were required to undergo a physical examination by a physician.

TABLE No. 12, PART I.—*Statistics of institutions having gymnasium or drill halls.*

NOTE.—Vital statistics are kept at the institutions marked *. L. G. indicates light gymnastics; H. G., heavy gymnastics; S. G., Sargent's gymnastics; Mil., military drill, Cal., calisthenics; °, optional; ^{r}, required; M. F., member of the Faculty.

	Institutions having gymnasium or drill halls, but in structures used also for other purposes.	Date of building or fitting up.	Cost of fittings, etc.	Material.	Number of rooms.	Dimensions of gymnasium in feet.	Character of fittings. M., Machines.	Kind of drill adopted.	Date of adoption of drill.	Number of hours' drill per week for individuals.
1	Augustana College, Ill	1883	Unfitted	Wood	1	88 by 96				
2	De Pauw University, Ind			Brick	1	100 by 50		Mil		
3	Iowa College, Ia		Unfitted		1	42 by 70		L. G		
4	Kansas State Agricultural College, Kan		Unfitted		2	35 by 35		Mil.°		
5	Central University, Ky							L. G		
6	Boston University, Mass	1882–'83	$600	Brick	2	35 by 20	Sargent M.	S. G.°; H. G.; Cal	S. G., 1883	2
7	Wellesley College, Mass.*	1882	$1,200 to $1,500	do	2		do	L. G.^{r}; S. G.^{r}	1882	1½
8	Vassar College, N. Y.*							L. G.^{r}; S. G		
9	Haverford College, Penn.*		1,900	Brick	2	82 by 25	Sargent M.	S. G.°	1880	
10	Connecticut Literary Institution, Conn	New.			1					
11	Morgan Park Military Academy, Ill	1879	1,500	Wood	3	40 by 60		Mil.^{r}		4
12	West Newton English and Classical School, Mass.	1860	500	do	1	40 by 30	Old style,	L. G.^{r}		
13	Phillips Academy, Mass	1818				40 by 80		L. G.°	1866	
14	Public Latin School, Boston, Mass	1881	1,500	Brick	1	130 by 60	Sargent M.	Mil.^{r}; L. G.°; S. G	Mil. 1865	
15	Williston Seminary, Mass	1860–'65?	20,000	do	2			L. G.^{r}		
16	Concordia Seminary, Mo	New.			1	Spacious		L. G		
17	Claverack College, N. Y	1861	6,000	Wood	1	50 by 80		Mil.^{r} for males; Cal. for fem.		
18	William Penn Charter School, Penn	1884	1,200	Brick	2	56 by 28	Sargent M.	S. G.^{r}	1885	2
19	Eng. and Classical School, Providence, R. I.	1875		do	1	90 by 40		L. G.^{r}; Mil.	1886	2
20	Bellevue High School, Va	Recently								

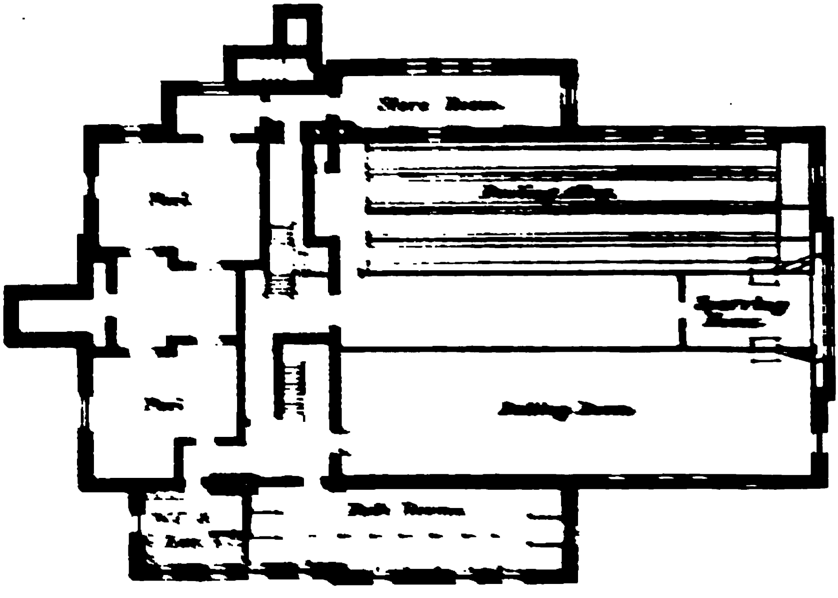
TABLE No. 12, PART II.—*Statistics of institutions having gymnasium or drill halls.*

	Institutions having gymnasium or drill halls, but in structures used also for other purposes.	Students of whom drill is required.	Drill is in charge of—	Number of lockers in dressing-room.	Bathing facilities. *a* Bath-tubs *b* Bowls. *c* Shower-baths.	Number of— *a* Water-closets. *b* Urinals.	Items regarding play-grounds.	Remarks concerning the character and amount of the instruction given in anatomy, physiology, and hygiene.	Number of students in 1882-'83. (M., males; F., females.)
1	Augustana College, Ill							Instruction given	72 M.
2	De Pauw University, Ind		U. S. officer					Instruction given	503—400 M.; 103 F.
3	Iowa College, Ia							Instruction given	304—154 M.; 150 F.
4	Kansas State Agric'l College		U. S. officer					Required instruction given	347—233 M.; 114 F.
5	Central University, Ky								
6	Boston University, Mass		Two sp'l teachers	24	Some		None	Instruction given	601—469 M.; 132 F.
7	*Wellesley College, Mass		Director, special teacher, M. D.		Good	Good	Ample gr'nds; also a lake.	Required instruction given	485 F.
8	*Vassar College, N. Y		Special teacher					Required instruction given	318 F.
9	*Haverford College, Penn		Medical director					Optional; instruction given	
10	Conn. Literary Institution, Conn							Instruction given	140—65 M.; 75 F.
11	Morgan Park Milit'y Acad., Ill								
12	W. Newton Eng. and Class. Sch.						Ball grounds	Instruction given	111—75 M.; 36 F.
13	Phillips Academy, Mass							Some instruction given	267 M.
14	Public Latin School, Boston		Special mil. inst.						381 M.
15	Williston Seminary, Mass		Special instructor					Some instruction given	
16	Concordia Seminary, Mo								
17	Claverack College, N. Y							Instruction given	248—138 M.; 110 F.
18	William Penn Charter School, Penn.	All boys	Medical director				Yard	Excellent day school	
19	English and Classical School, Providence, R. I.	All boys	Special teachers					Physiology taught	
20	Bellevue High School, Va						Ball grounds		50. (?)

DESCRIPTIONS OF THE PRINCIPAL GYMNASIA.

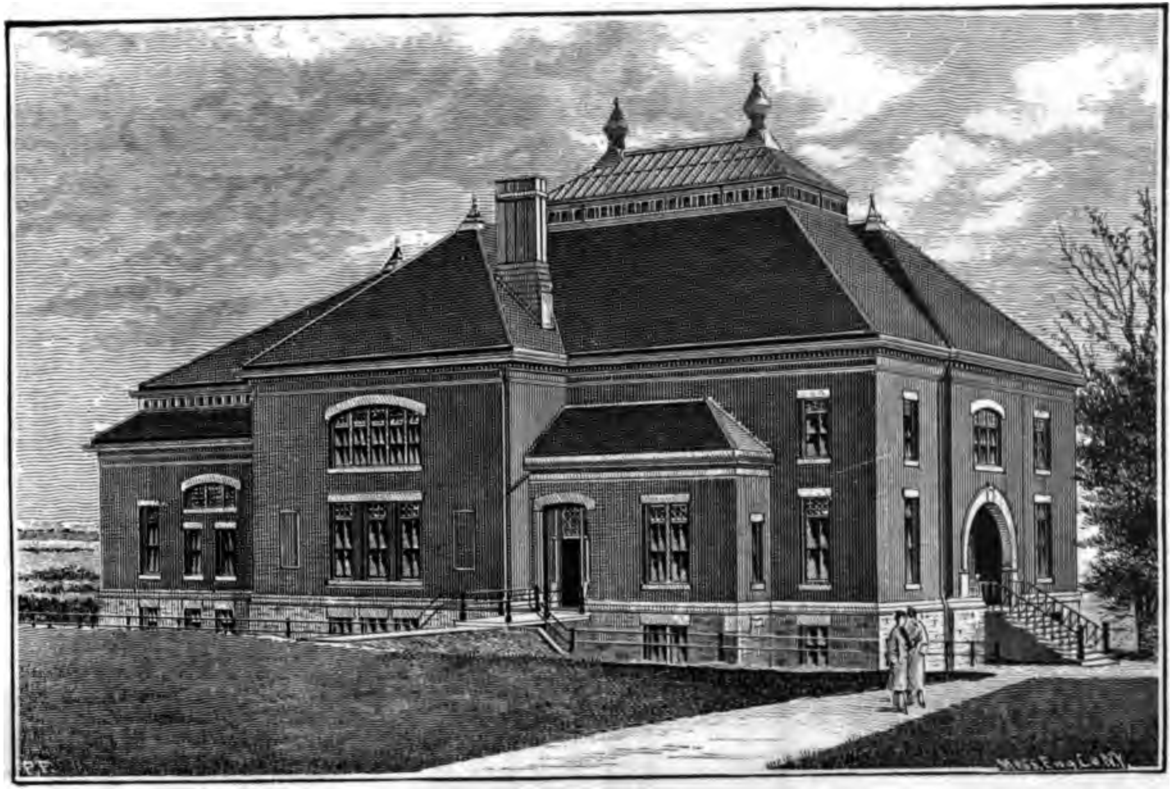
THE PRATT GYMNASIUM AT AMHERST COLLEGE.

The new gymnasium at Amherst College, which was completed during the summer of 1884, is styled the Pratt Gymnasium, in honor of C. M. Pratt, of Brooklyn, N. Y., a graduate of the college in 1879, who contributed nearly $40,000 for its erection. The building, which faces westerly, is situated within the college precincts, on, or rather in, a side-hill sloping toward the south. The structure, which is 120 feet by 80 in the clear, is of brick, has a slated roof, and comprises two stories and a basement. E. L. Roberts, 46 Broadway, New York City, was its architect. Through the kindness of Dr. E. Hitchcock, its director, we are enabled to give the floor plans of the Pratt Gymnasium and a view of the building and to furnish an itemized statement of its cost. The rooms of the first floor, besides the front and side entrance halls, are four in number: main hall and annex, [illegible] feet by [illegible]; dressing room, 38 feet by 40, with [illegible] heated and ventilated lockers; a sudatorium, or drying room, 17 feet by 12; a shower room, 18 feet by 12, opening from the sudatorium, and containing 6 shower baths; the professor's room, [illegible] feet by 18, fitted as a study and office; and a statistics room, 18 feet by [illegible] [illegible]



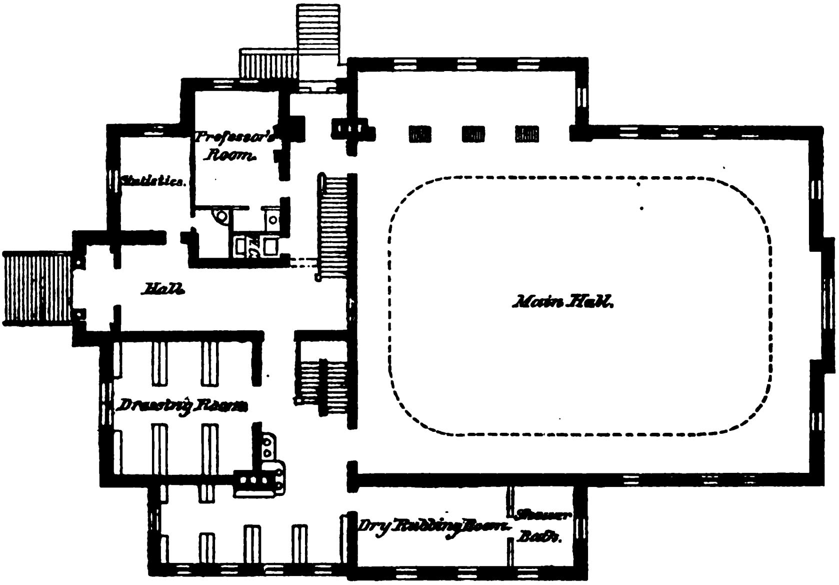
Pratt Gymnasium—Basement Plan.

[illegible] containing [illegible] or [illegible] The col-

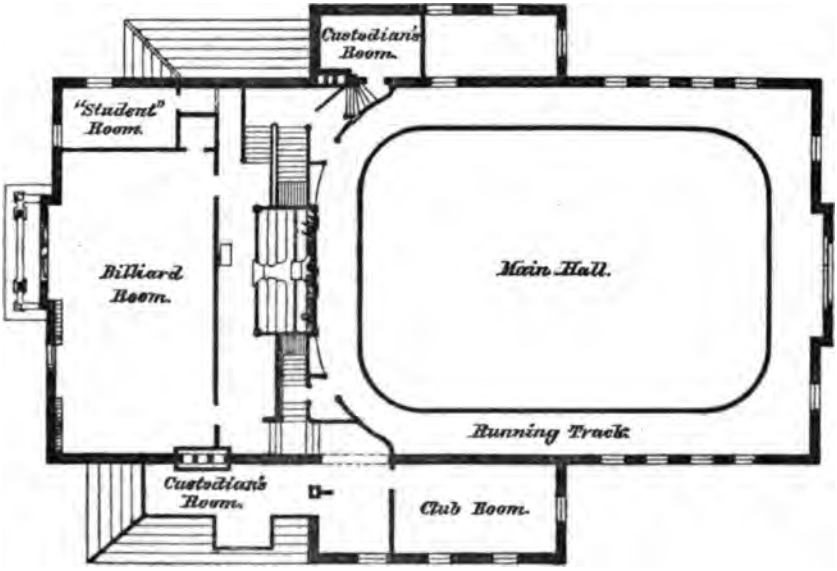


THE PRATT GYMNASIUM.

lege journal) and reading room; 2 rooms, respectively 16 feet by 10, and 32 feet by 16, for the custodians of the building to live in; a furniture room, 20 feet by 10; a spacious visitors' gallery; and a running track, 207 feet long, extending around the main hall at an elevation of 11 feet from its floor.



Pratt Gymnasium—First Story Plan.



Pratt Gymnasium—Second Story Plan.

In the basement, which is high-studded and lighted by windows on all sides, there are 7 rooms, viz.: the bowling room, 76 feet by 21, with

3 alleys 70 feet in length; a sparring room, 23 feet by 13; a "cage," or room for base-ball and tennis practice, 76 feet by 21; a bath-room, 58 feet by 12, containing 6 tub and 6 sponge baths; a room, 16 feet by 13, containing 2 water-closets and 3 urinals; a store-room, 38 feet by 9; a fuel cellar, 28 feet by 24; and a boiler room, 24 feet by 24.

In the Barrett Gymnasium all provision for lighting after dark was deliberately omitted; but the Pratt Gymnasium has been abundantly supplied with gas fixtures. The main hall of the new gymnasium, which is ceiled with yellow pine, is 40 feet high in the central part, and is lighted by means of a large skylight in the roof, besides numerous side and end windows. The fixed apparatus and Sargent developing appliances, with which this gymnasium is liberally furnished, are placed in the main hall under the visitors' gallery and that formed by the running track. The open floor space of the main hall is amply sufficient, when cleared of the portable gymnastic machines, for one hundred men to engage in class exercise, which, as has been remarked already, is a peculiar feature of the Amherst *régime*. The gymnasium is open in term time from 8.15 A.M. to 10 P.M.

Those who wish to inform themselves fully as to the details of the Amherst system will do well to consult "A Manual of the Gymnastic Exercises as practiced by the Junior Class in Amherst College. Prepared under the Direction of Dr. Edward Hitchcock, Professor of Physical Education and Hygiene. Boston: Ginn, Heath & Co. 1884."

The following itemized statement concerning the cost of building and furnishing the Pratt Gymnasium is of interest:

The building as per contract	$49,825	00
Excavation	1,500	00
Retaining wall, and railings	1,300	00
Heating apparatus	3,700	00
Plumbing	2,790	00
Gymnastic apparatus	1,824	61
Bowling alleys	1,200	00
Billiard tables and fixtures	630	00
Piano	460	00
Gas fixtures	560	68
Gas piping	424	00
Anthropometric apparatus	100	00
Other furniture	149	00
Tiling	850	00
Safe, for papers and books	100	00
Total	65,413	29

THE CORNELL UNIVERSITY GYMNASIUM.

The following account of the gymnasium at Cornell University and of its method of working, was kindly furnished by Lieut. Walter S. Schuyler, U. S. A., Professor of Military Science and Tactics at the university, in the absence of the professor of physical culture.

Buildings.—The main building, completed in 1882-'83, is of brick, with heavily buttressed walls, the self-supporting roof tiled without and ceiled within. To this structure was annexed the frame building formerly used as a gymnasium, refitted and practically rebuilt. In this addition are 6 shower baths, a toilet room, closets, an office for the director, a withdrawing room for use in physical examinations, a small store room, and, on the second floor, a set of 250 lockers for use of students. The whole was designed to serve the double purpose of gymnasium and armory.

The main building comprises the armory and gymnasium hall, with the floor, 60 by 150 feet, laid solidly in cement; an office for the military professor; a military store room; and over these rooms and the lobby, a gallery for spectators. On occasion, the gallery accommodates an orchestra, and the office is arranged for use as a ladies' dressing room.

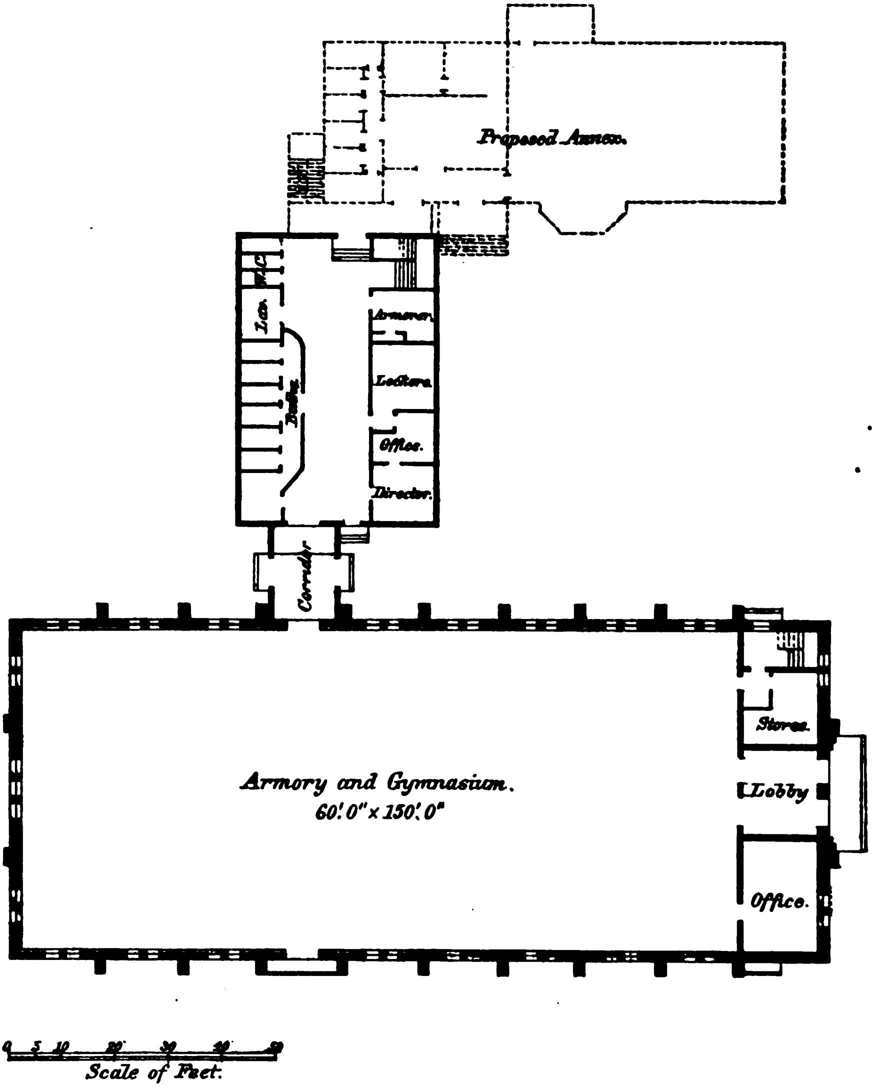
As the main hall must be used alternately as a gymnasium and a drill room, nearly all of the apparatus is made detachable and portable, and on drill days is, so far as necessary, removed into the annex, or hauled up to the iron suspension frame by the janitor. The removal occupies but a few minutes, and after drill the muskets are locked in arm racks and the apparatus replaced in short order, so that class work with dumb-bells and clubs, as well as general exercise, begins in half an hour after the recall from drill.

The present locker and bath accommodations having been found inadequate for the rapidly increasing student body, an additional building has been planned to supply this deficiency, and also to give room for special exercises. This annex will be of two stories with a basement. The latter will contain four bowling alleys. On the ground floor will be six bath rooms of various kinds, a rubbing room, and a dressing room; also a hall, 30 by 52 feet, for an upper classmen's general exercising room, fitted with about 100 lockers, and a small store room. The attic floor will comprise a base-ball cage, 19 by 75 feet, in which certain rowing machines will be placed, and small store closets between the several windows protecting the same.

Equipment.—The gymnasium is equipped with apparatus of the most approved make and adjustment. The heavier pieces are mainly from the Boston establishment; some have been manufactured in the university shops, and there are a few "Gifford" and other patent appliances. The machines are arranged about the room with a view to orderly and systematic work, and on each is posted a card of direction as to its use.

System.—The affairs of the associated departments of military science and physical culture are regulated by a council composed of the president of the university, one other member of the board of trustees, the professor of physiology, etc., the professor of military science, and the professor of physical culture.

The system now in vogue was adopted last year on trial, and thus far has been found to work well. As soon as possible after the opening of the fall term, all members of the new class are subjected to a systematic examination by the professor of physical culture, the measurements and other statistics being recorded in a book prepared for the purpose. Military drill is required of all members of the Freshman and Sophomore classes; but such students as are found, upon the examination referred to, to imperatively need special gymnastic training, are at once transferred from the military to the gymnastic department, and are required to pursue a course of training laid down for them by the examiner, this course comprising five exercises per week, on the apparatus specially adapted to their individual needs.



Plan of Cornell University Gymnasium.

For all other students work in the gymnasium is optional, and under the advice and direction of the professor and his assistant. Many of the men whose development is not sufficiently defective to warrant their transfer from the military department, are advised by the examiner as to their deficiencies. To each is given a card showing a comparison between his own statistics and the average to be expected in a subject of corresponding stature and weight.

The professor of physical culture is also the medical examiner for all those wishing to get excused from military exercises on the ground of physical disability. The applicants for such exemptions for limited periods are not more numerous than is to be expected in a battalion aggregating two hundred men.

Students absenting themselves from their assigned gymnastic or military exercises for any cause other than illness, must conform to the regulations governing absence from other university duties.

This system, outlined above, will probably be, in time, so modified as to require work in the gymnasium during the winter term of the entire Freshman class. During that term there is no drill.

The professor of physical culture is aided by a skilled assistant who conducts the class exercises and supervises all practice with the apparatus. He also gives instruction in boxing and acts as coach for the outdoor athletics.

The exercises of the women students are conducted in the gymnasium of Sage College, by the professor in person, with the assistance of the matron.

During the past year there were about twenty students transferred from the military department for compulsory exercise, and the result of their practice, as shown by comparison of the measurements made at the beginning and end of the year, is most gratifying, the total increase of the class (thirteen measured) in the one item of "lung capacity" being over forty cubic inches.

In addition to this class upon which the exercise was compulsory, the students to a large number have availed themselves of the privileges of the gymnasium with greater or less regularity, and in every case to good effect. Perhaps the best evidence of this is to be found in the records of Cornell in the State intercollegiate contests during the spring of 1885.

It is found by examination of the statistics that the topography of the country supplies, in a sense, the place of a gymnasium for the students at large, the average increase of leg and lung dimensions during their first year being unprecedented in college statistics.

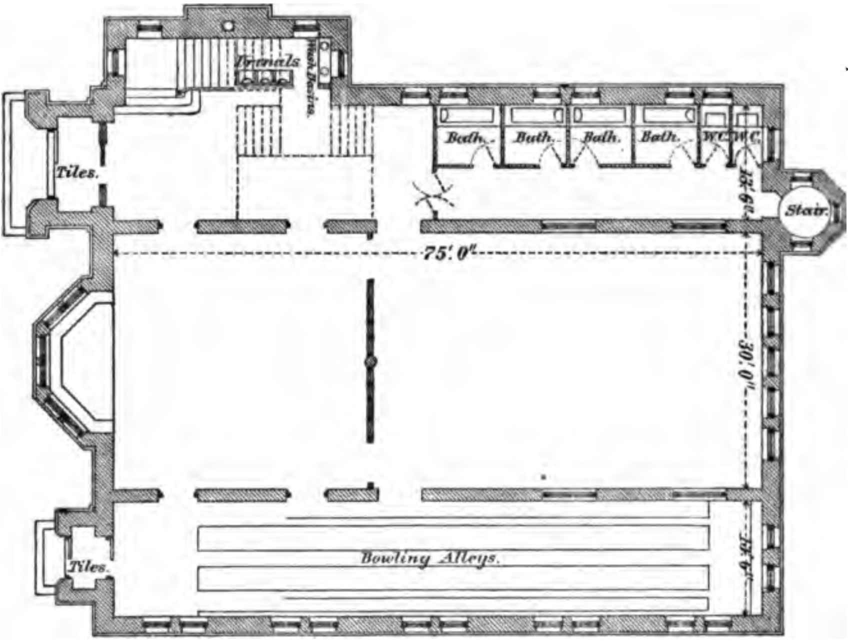
The military drill gives a special training in discipline and personal carriage which proves beneficial, and the effect of which is observed by all who visit our campus.

Plan of the gymnasium.—It may be readily seen that we have a main gymnasium hall equal in space and equipment to any in the country, except, perhaps, that of Harvard; and after the completion of the additional buildings as planned, our facilities will be second to none.

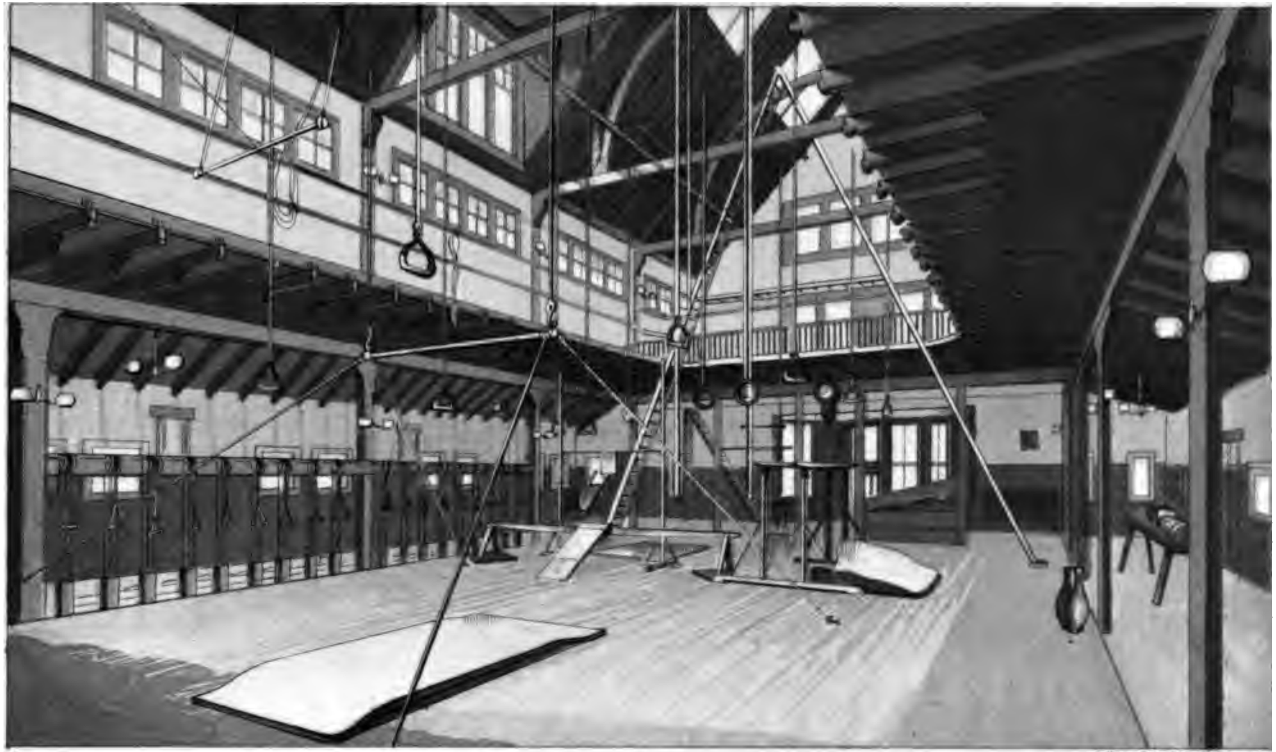
It appears from the printed forms accompanying Lieutenant Schuyler's account, that the system of measurements and of obtaining the "history" of an individual is the same as that used at Harvard and at Amherst, and that cards are furnished each student exercising in the gymnasium, containing specific printed directions in regard to the apparatus he must use and the time he must use it.

THE LEHIGH UNIVERSITY GYMNASIUM.

The Lehigh University Gymnasium, at South Bethlehem, Pa., is situated on the university campus and faces west. The building was planned by Addison Hutton, architect, 400 Chestnut street, Philadelphia. Dr. Sargent of Cambridge rendered valuable service in perfecting the plans, which embody features suggested by his experience as director of the Hemenway Gymnasium. The building, of Potsdam sandstone, is an elegantly finished structure, and occupies a commanding site, being on the highest part of the university grounds. It was erected in 1882 out of the university funds, at a total cost, including fittings and furniture, of $40,000, and comprises two stories of stone and a third of wood. The basement contains the engine, gauged to a pressure of 30 pounds, with a boiler having a capacity of 100 gallons. The average pressure required is 8 pounds, and on the coldest days not over 15 pounds. Thus, with the numerous radiators throughout the building, it is possible to maintain easily a comfortable temperature in the



Lehigh University Gymnasium—First Floor Plan.



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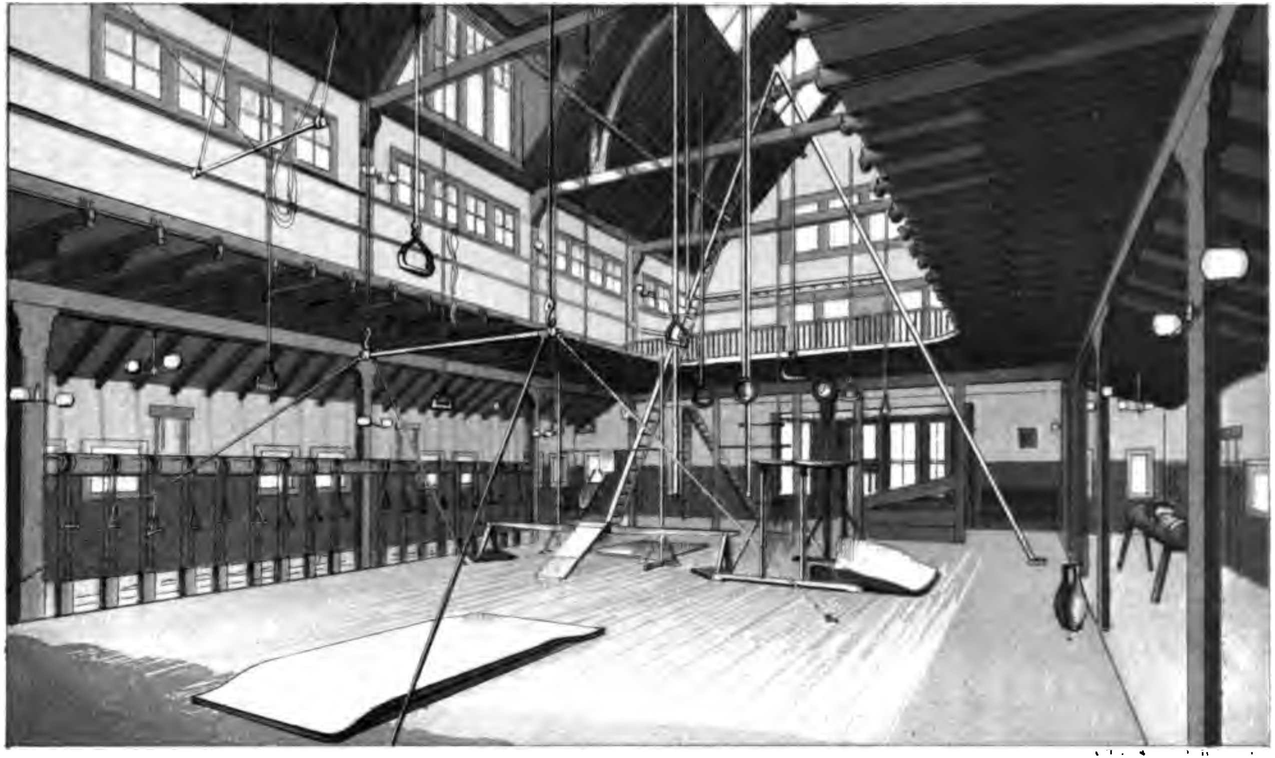
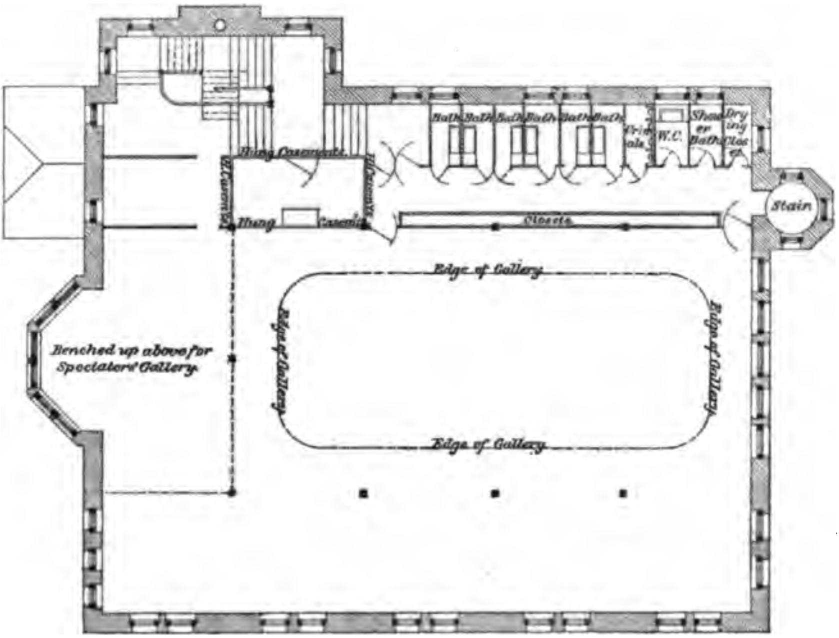
LEHIGH UNIVERSITY GYMNASIUM, (INTERIOR VIEW.)



LEHIGH UNIVERSITY GYMNASIUM, (INTERIOR VIEW.)

coldest weather. As represented in the front view of the exterior, there are two entrances on the ground floor, viz., the main entrance, on the left, and the entrance to the bowling alleys, on the right. The two bowling alleys are contained in a room 74 feet by 13½. Besides the bowling alleys and the vestibule, which is 30 feet by 20, there are on the first floor a billiard room, 30 feet by 30, containing a pool table and a billiard table; an assembly room, 44 feet by 30, for students' meetings, which, although furnished with settees, can also be used for fencing and sparring; and a bathing and dressing room, 38 feet by 13½, containing 4 long tubs, 2 water closets, and 126 ventilated closets, or lockers, for clothing. A small side room, containing 2 wash bowls and 3 urinals, opens from the vestibule on the left.

On the second floor, which is reached by a broad main stairway in front and a retired stairway in the tower at the rear, there are four rooms, viz.: the director's office, 16 feet by 7, fitted with electric bells, and so arranged with glazed casements as to command a view of the whole floor as well as the stairway from the vestibule; the examining room, 10 feet by 7, fitted with scales, measuring rods, dynamometers, and the appliances for making the various strength tests and recording the results of the examinations; a bath room, 44 feet by 13½, containing 6 soapstone sponge-bath tubs, 3 urinals, a water closet, shower room with communicating drying closet, and 120 lockers; and the main hall, or exercise room, 75 feet by 45. The main hall is 40 feet high in the center, and is lighted by a bay-window containing 12 large panes, 36



Lehigh University Gymnasium—Second Floor Plan.

large windows, 52 smaller windows, besides 8 large skylights of ground glass in the roof, each containing 4 panes, 2 feet by 7.

The visitors' gallery, having benches for spectators, and the running track of 38 laps to the mile, take the place of a third story.

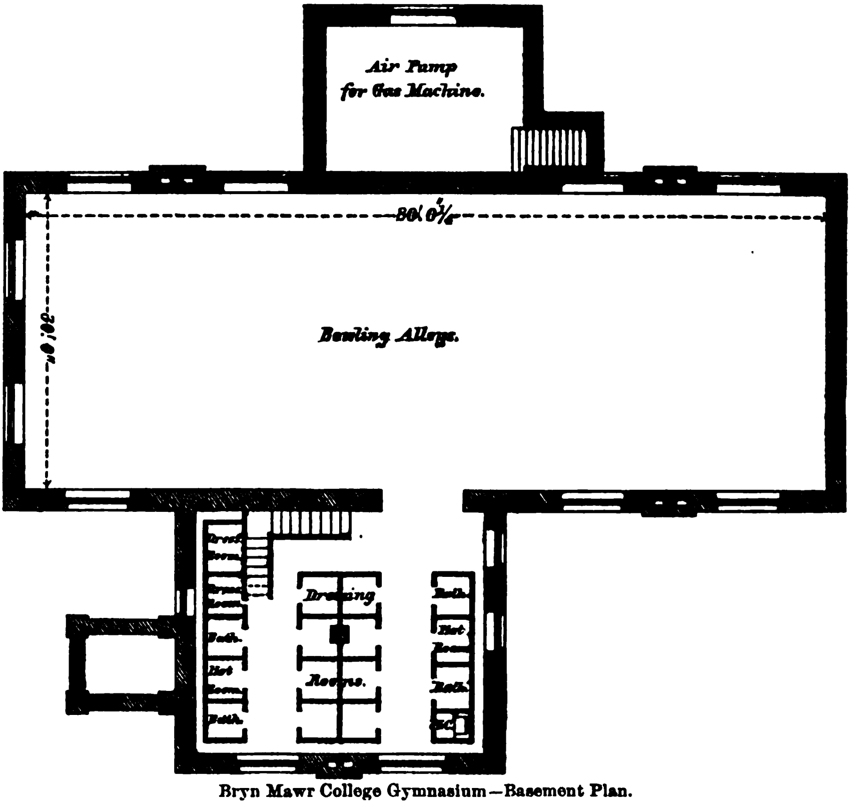
The main hall is fitted with 23 pairs of chest weights, 22 pieces of Dr. Sargent's apparatus for individual development, and the usual gymnastic apparatus, such as parallel and horizontal bars, flying and traveling rings, trapezes, ladders, spring-board, Indian clubs, dumb-bells, etc.

The ceiling of the main hall and of the dressing room is of oiled yellow pine.

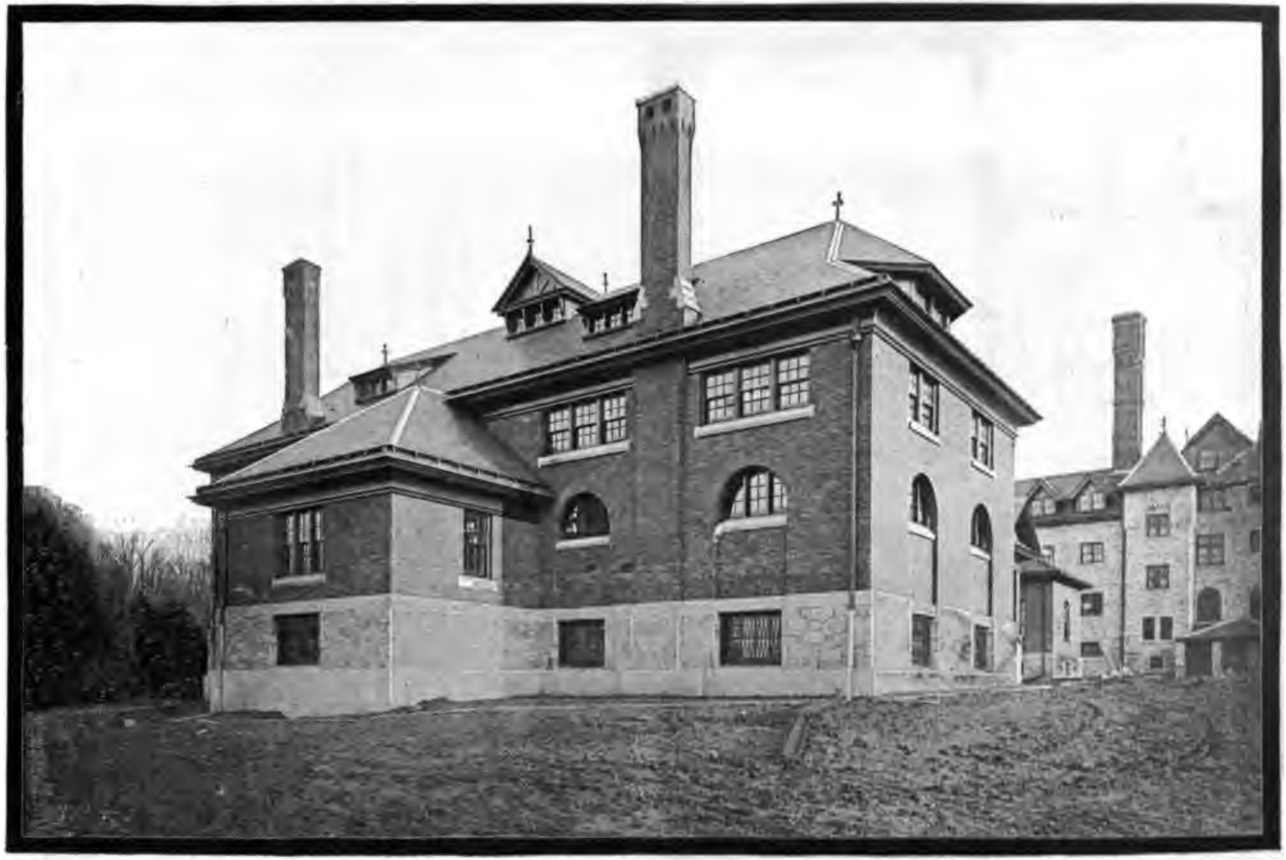
Thanks are due to President T. H. Lamberton and Director W. H. Herrick for the pains taken to provide the views, plans, and description herein given of the Lehigh Gymnasium. This gymnasium is, taken all in all, a model structure, on account of its elegance, convenience, and commodiousness.

GYMNASIUM OF BRYN MAWR COLLEGE.

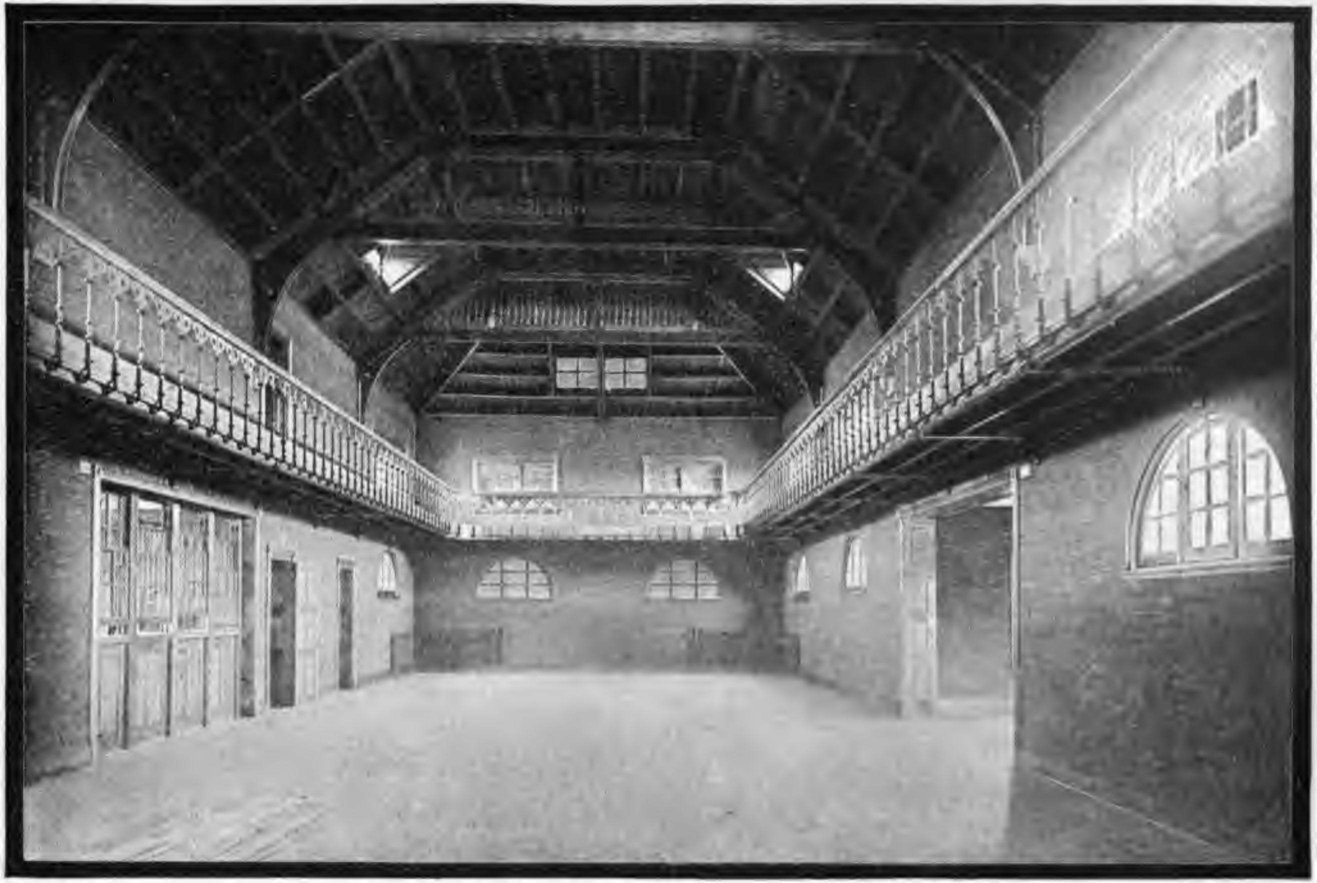
The architectural design, both as to the exterior and interior, is the outgrowth of a careful study of the requirements of a gymnasium for girls, limited in its execution by due regard to economy. The walls of the basement extend 5 feet above the ground line, and are built of dark-



Bryn Mawr College Gymnasium—Basement Plan.



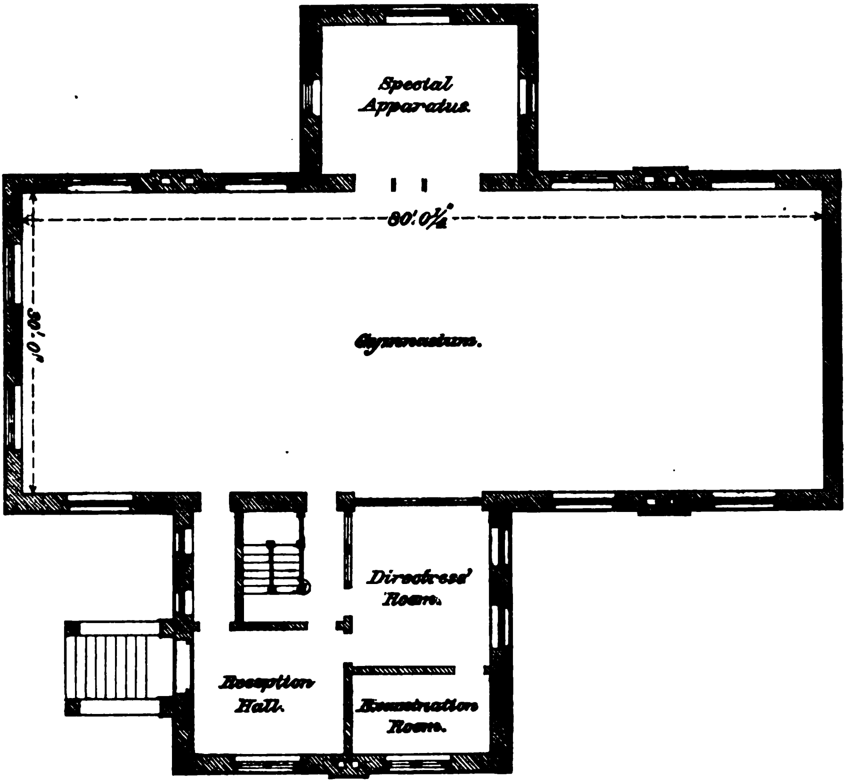
BRYN MAWR COLLEGE GYMNASIUM.



BRYN MAWR COLLEGE GYMNASIUM. INTERIOR VIEW

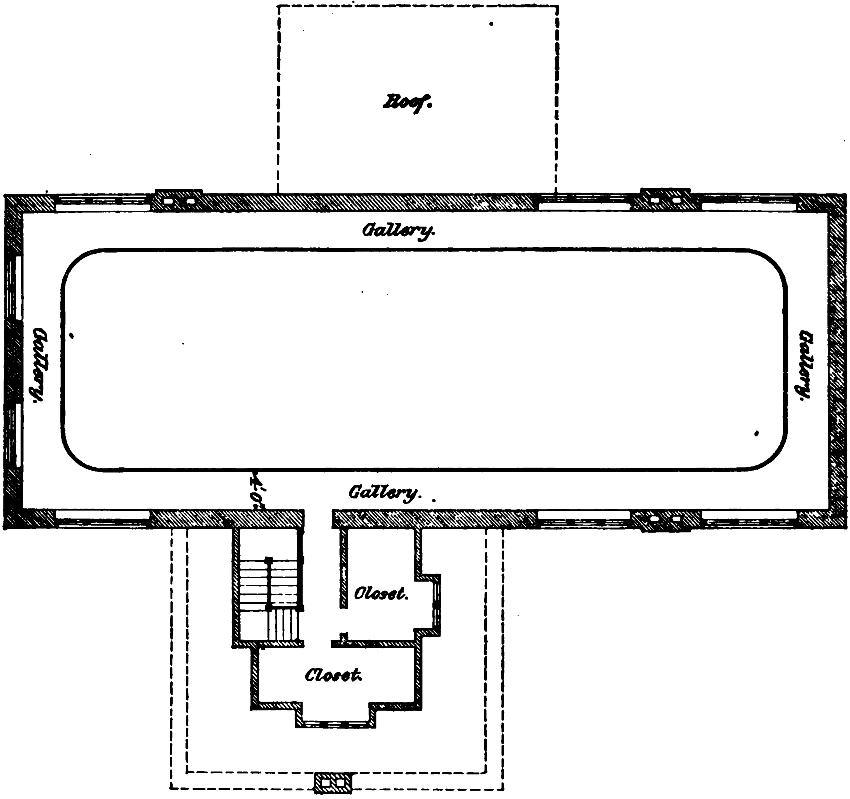
gray granite. Above the basement the walls are made of red bricks laid in red mortar, and no plaster appears on their inner surfaces.

The main floor of the building contains the principal hall, 80 feet long by 30 feet wide, 22 feet high to the collar beams, and open to the roof above, the timbers of which are exposed and finished to show the natural grain and color of the wood. Around this hall, at a height of 10 feet from the floor, is placed a gallery, 4 feet wide and supported upon iron cantalevers inserted into the walls, to be used as a track for walking or running. The floor of this gallery is of narrow pine boards, and along its front is an iron balustrade of a pleasing design, surmounted by a wooden hand-rail. Upon the north side of the main hall and separated from it by curtains, is a small room, 14 by 20 feet in size, intended for special apparatus.



Bryn Mawr College Gymnasium—First Story Plan.

Upon the south side of the main hall, where are the rooms of administration, there is a reception room, 12 feet 6 inches wide by 15 feet long, entered by the front door. Beyond this room visitors cannot pass without the express permission of the directress. Opening from this is the directress's room, 16 feet long by 14 feet wide, which is separated by glass partitions from the main hall and from the passage leading to it and to the stairways. Adjoining this is the examination room, designed for the examination and record of the physical development of each student using the gymnasium. From the reception room extends a passage way, which is usually closed, and through which alone visitors may be admitted to the main hall. Another doorway from the reception room admits students to the passage, from which one stairway ascends to the walking track, and another descends to the basement. Over the directress's room and examination room is an apartment reserved for the use of the directress.



Bryn Mawr College Gymnasium—Second Story Plan.

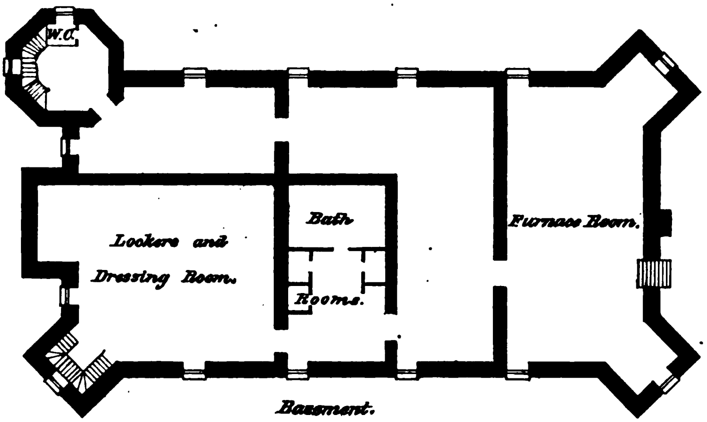
The basement contains an apartment which is of the same dimensions as the main hall above. It is 9 feet high, well supplied with windows, which are colored and arranged to open inward, so as to secure abundant light and air, with complete privacy. It is further ventilated by 8 large flues, in which a current is kept up at all times by steam-heated coils of pipe. One half of this apartment is reserved for a bowling alley, the other for dressing rooms. Adjoining this apartment and beneath the administration room, is a space allotted to bath rooms and dressing rooms. The bath rooms are 4 feet square; they are lined with lead on the bottom, and on the sides to the height of 5 feet. They are supplied with hot and cold water, with a sprinkler, and are designed for sponge baths only. They are entered from a hot room, into which the bather steps after the bath. The floor of the entire basement is laid with hollow tiles and covered with asphaltum, so as to make a thoroughly dry surface.

n the arrangement of the whole building great attention has been en to the admission of an abundance of light and to thorough venti- on. The entrance is so arranged as to secure the greatest privacy sible, in order that the students may take exercise without the htest fear of intrusion.

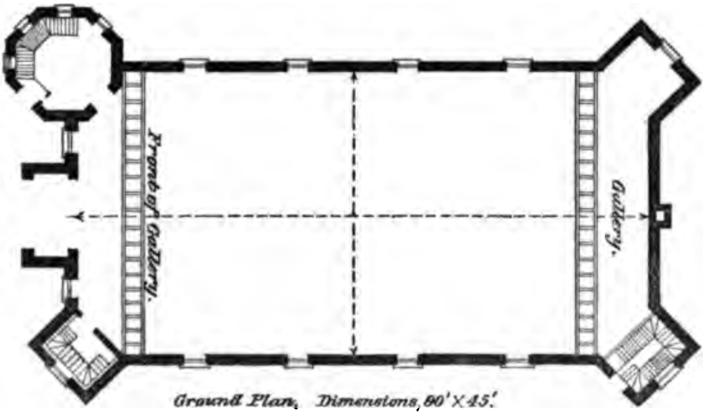
THE LAFAYETTE COLLEGE GYMNASIUM, EASTON, PA.

he gymnasium has one story and a basement, is built of brick, with ate roof, and a tower at each corner.

he basement contains the dressing room, provided with lockers, bath rooms provided with bowls and sponge, shower, individual, and lle baths. The main floor has a gallery across each end, one used by tors, the other by the medical director. It is lighted by four large dows on either side, and above by four dormer windows on each in the roof; a rose window over the main entrance; and two dor-



Basement.



Ground Plan, Dimensions, 90'×45'.

Lafayette College Gymnasium.

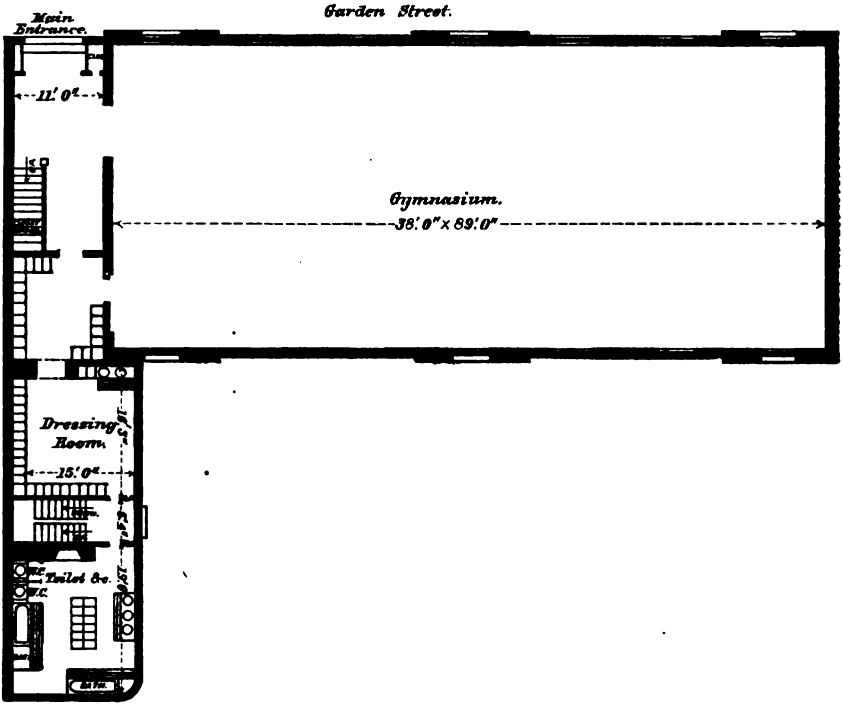
mer windows on the north end. There are also windows in the towers; these open into the main tower and increase the light.

The ventilation is carried on by means of three flue shafts, with openings at the floor. The heating is by steam, direct radiation. The ceiling shows the roof timbers and is ceiled with wood above.

THE JOHNS HOPKINS UNIVERSITY GYMNASIUM.

This gymnasium is conveniently situated near to the university buildings, in Baltimore. The main building is a parallelogram in plan, running north and south. An L wing, containing dressing rooms, baths, director's office, and examination room, extends easterly from the south end of the main building. Exclusive of the wing, the building covers a lot 40 feet 2 inches by 103 feet 2 inches, and is one story high. The wing, which is a remodeled structure of ancient date, is of two and a half stories, and is 18 by 45 feet in area. Upon entering the hall through the vestibule a wide staircase on the right leads to the office and examining room of the director. On the left, and near the front of the hall, is the entrance to the main hall, or gymnasium proper. This room is 38 by 89 feet, and is covered by a simple open-timbered roof, constructed with queen-post principals. The trusses, being spaced about 13½ feet apart, form 7 bays in the length of the room. The ceiling in the center is 45 feet high, and at the sides 24 feet high "to plate." Each side wall is pierced by 7 large semicircular-headed windows, the sills of which are 6 feet above the floor, thus giving abundance of light. There is a ventilator in the roof at its middle point, by which, together with four stoves of peculiar pattern, the room is easily and well ventilated. Artificial light is supplied, when needed, by bracketed fixtures on the wall panels and a chandelier just under the ventilator. The rafters are all dressed and open to view, and the ceiling is formed on the back of them by narrow tongued-and-grooved cypress lining. Rafters and ceiling are finished naturally. The inside brick-work is laid up with flush joints and is painted of a light-buff color in oil. The advantage and durability of this style of finish over plastering is indisputable. The fixed apparatus consists chiefly of Sargent machines, which are for the most part secured to the walls. The floor apparatus is portable. The dressing rooms, which communicate by a doorway with the main hall at its south end, have also a door opening from the east end of the entrance hall. There are 4 dressing rooms—2 on the first floor and 2 on the third—containing in all 226 lockers. On the first floor are 6 set bowls, with hot and cold water, 2 baths, and 2 water-closets, all of approved pattern.

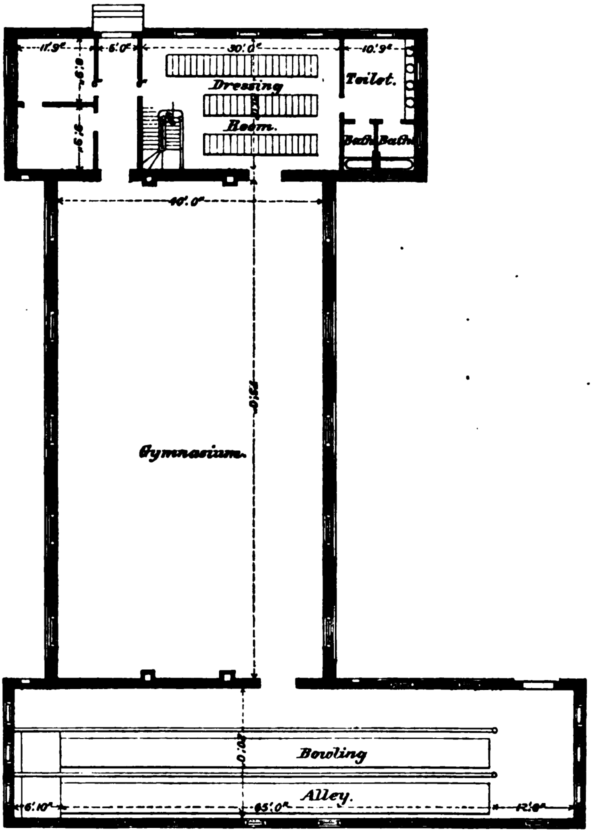
We have here produced the plans and descriptions of the Johns Hopkins University and the Dickinson College gymnasia for the purpose of showing that commodious and well-fitted gymnasia can be had at a comparatively slight cost. If an institution can afford to decorate its campus with an elegant building, architecturally considered, well and good. But it should not be supposed that it is necessary to expend thirty or forty thousand dollars in order to provide gymnastic and bathing facilities for 250 or 300 students. In our opinion, the Lehigh and Amherst gymnasia cost more than was necessary, needless expense having been incurred in finishing the walls with costly linings of wood. The total cost of the Johns Hopkins Gymnasium, with all its accessories and fittings, including apparatus, was not far from $10,000.



Plan of Johns Hopkins University Gymnasium.

THE DICKINSON COLLEGE GYMNASIUM.

The Dickinson College Gymnasium, at Carlisle, Pa., was completed in 1884. The building has a frontage of 120 feet on a village street, and is conveniently accessible from all the college buildings. In plan it is a parallelogram, with a wing at each end. The main hall is 40 by 75 feet on the floor, and is accessible from the campus by means of a spacious entrance hall through the east wing, which is 23 by 62 feet, two stories high, and contains the dressing rooms, baths, offices, examining room, etc. The opposite, or west wing, is 23 by 87 by 20 feet, one story high, and contains the bowling alleys, three in number. This wing is entered from the main hall. The building is constructed of brick, with stone sills, and is covered by a simple open-timbered roof, the trusses being placed about 15 feet apart and forming bays, each of which is pierced by a large window, admitting ample light and serving for a good natural ventilation. The walls are finished with flush joints for painting, and the woodwork throughout is finished "naturally" in oil, and is of the best material. To complete the building, including bowling alleys, but exclusive of plumbing and the fittings of the dressing room and main hall, cost $7,300.

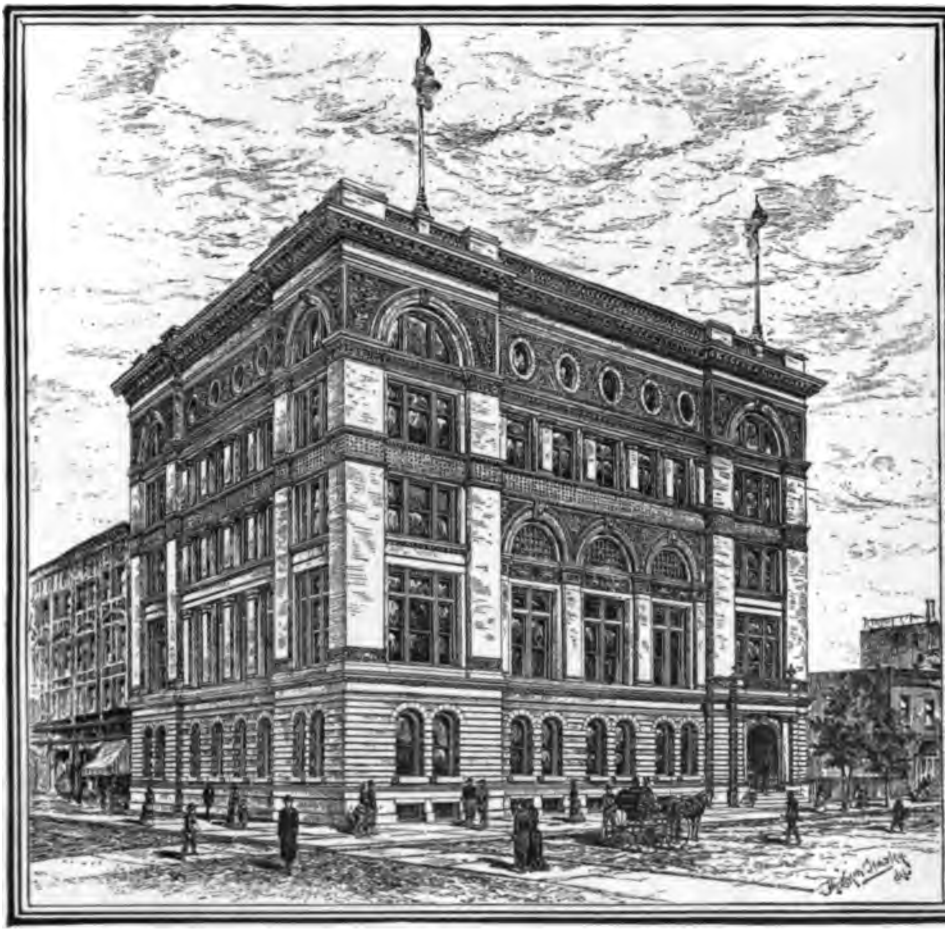


Plan of Dickinson College Gymnasium.

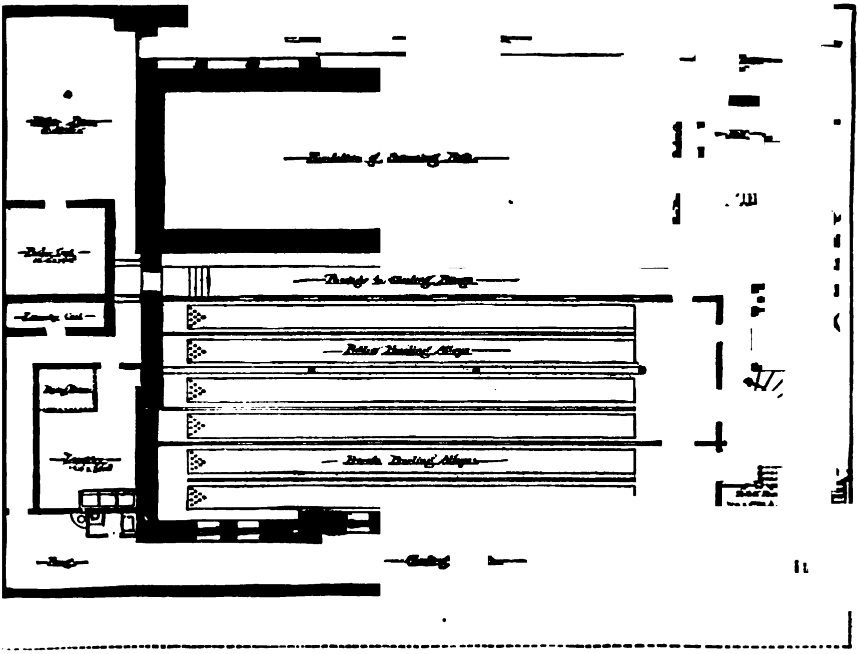
THE BUILDING OF THE NEW YORK ATHLETIC CLUB.

The building of the New York Athletic Club is not a gymnasium only; it is a fully equipped club house. Situated on the south-west corner of Sixth avenue and Fifty-fifth street, it extends 75 feet on the avenue and 95 on Fifty-fifth street, and is four stories high.

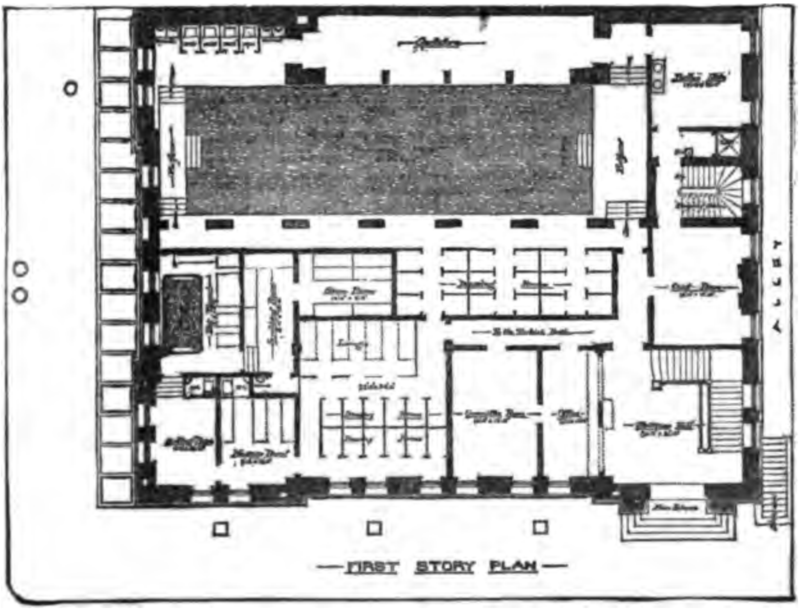
The basement contains six bowling alleys and a rifle range. In the first story there are facilities for Turkish and Russian bathing, and a swimming bath 66 feet long by 20 wide. The second story contains a reception hall, parlor, reading room, billiard rooms, and a restaurant.



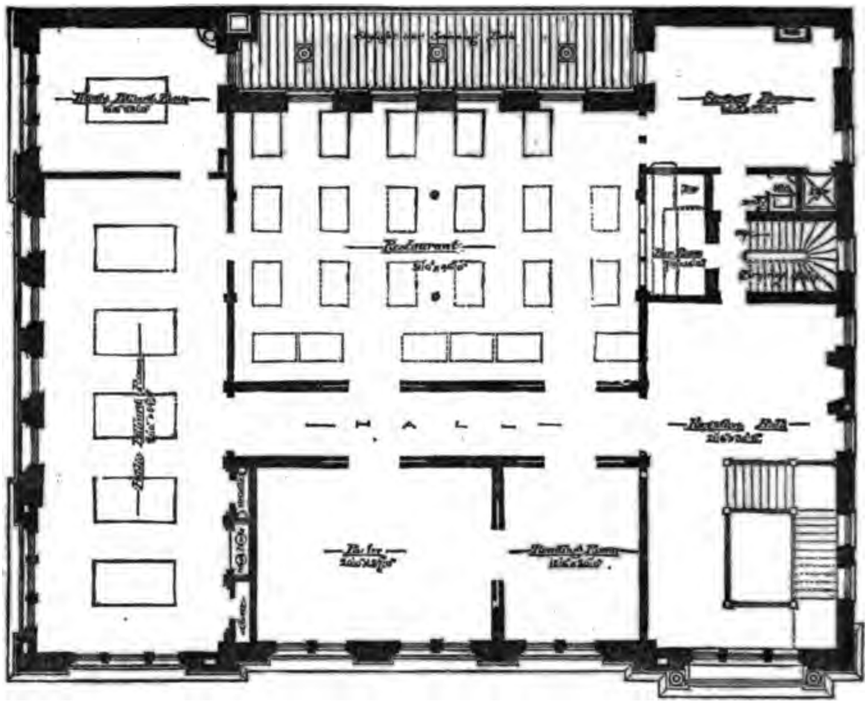
BUILDING FOR THE NEW YORK ATHLETIC CLUB.



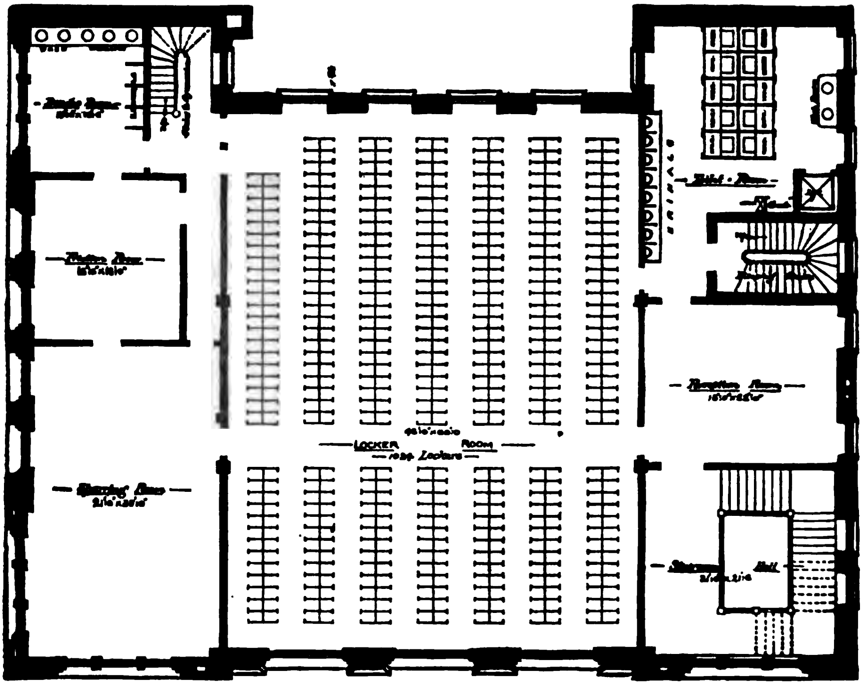
BASEMENT PLAN



Building of New York Athletic Club.



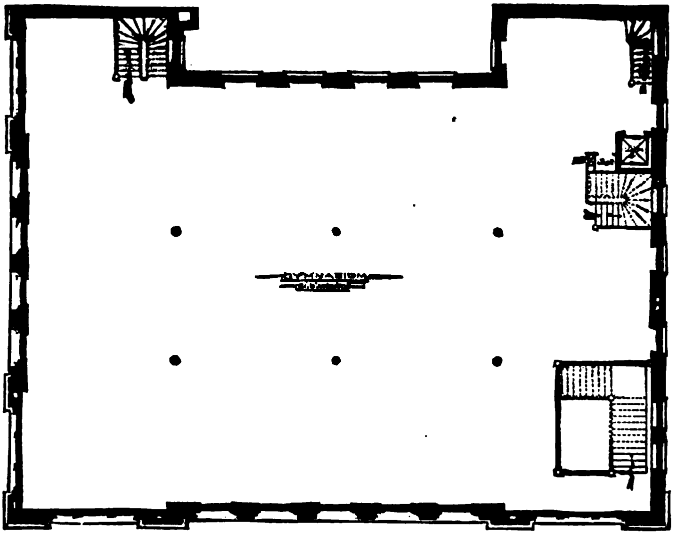
SECOND STORY PLAN



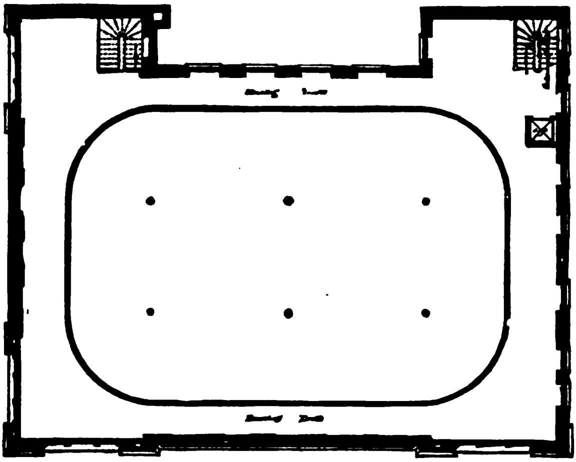
THIRD STORY PLAN

Building of New York Athletic Club.

n the third floor are a thousand lockers, a lavatory, *douche* room, reeption room, and sparring room. The entire area of the fourth floor is ccupied by the gymnasium; it is 22 feet from floor to ceiling, light and iry. Around this hall, 12 feet from the floor, extends a track for the se of runners; twenty-two laps of it make a mile.



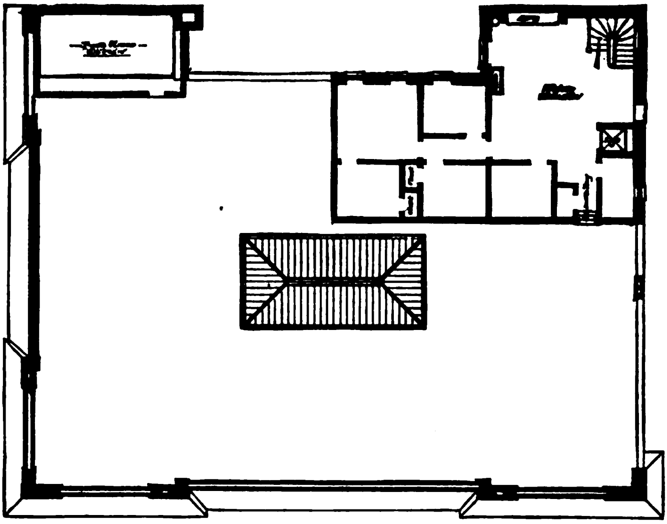
—FOURTH STORY PLAN—



——GALLERY PLAN——

Building of New York Athletic Club.

The cost of the building was $250,000. The club is in a flourishing condition, with fifteen hundred members and three hundred more waiting anxiously to get in. The initiation fee is $50, and the annual dues $30. Mr. William R. Travers is the president.



—ROOF AND SUPERSTRUCTURE—

Building of New York Athletic Club.

The tendency of the builders of our best and newest gymnasia is to incorporate certain of the features of those of ancient Greece. This is most manifest in the liberal bathing facilities and the means afforded for social intercourse and amusement in the best of the gymnasia above described. The ideal gymnasium would be in close proximity to the fields devoted to athletic sports. At present the Hemenway Gymnasium approaches the ancient type more nearly in this respect than any other known to us.

NORMAL AND PREPARATORY SCHOOLS.

It appears from the Report of the Commissioner of Education for 1873 that out of a list of 119 normal schools in the United States only 17 claimed to possess a gymnasium. The Commissioner's Report for 1882–'83 shows that 19 out of 119 public normal schools, and 16 out of 114 private normal schools, had gymnasia. As regards preparatory schools, the same Report notices the fact that 56 out of 157 of them had gymnasia.

YOUNG MEN'S CHRISTIAN ASSOCIATION GYMNASIA.

GENERAL CHARACTER.

As a class, the gymnasia belonging to the Young Men's Christian Associations are better furnished and officered than those belonging to the two classes of schools above mentioned. Since 1869, when the New York Young Men's Christian Association opened a gymnasium in its new building, "physical culture" has been a prominent feature in Association work. The Young Men's Christian Association Year Book for 1884, p. 141, states that "83 associations report attention to physical culture; 68 of these through gymnasia and 23 through other means, including base ball, rambling, rowing, and swimming clubs, bowling alleys, health lifts, and classes in calisthenics." Since this statement applies to the United States and Canada, and only two of the Canadian associations report gymnasia, 66 appears to be the correct number for the United States, or rather 67, since the Boston Young Men's Christian Union Gymnasium properly belongs in this category, even though its managers and patrons represent a different type of theology from that of the affiliated associations.

In the days of primitive Christianity "gymnastical sports and exercises" were classed with the "madness of the theater, huntings, and horse-racings," and those addicted to them were required "either to leave them off or be rejected from baptism." Superintendents of gymnasia probably correspond as closely as any class of modern men to the ancient "curators of the common games and practicers in the Olympic games," who, with "charioteers, gladiators, minstrels, harpers, dancers, and vintners," were commanded by the apostolic constitutions either to quit such callings or be rejected from baptism.

The gymnasia of the Young Men's Christian Associations in the following named cities have their own salaried superintendents, as is shown by the published lists of officers: Baltimore, Md.; Boston, Mass.; Brooklyn, N. Y.; Buffalo, N. Y.; Chicago, Ill.; Cleveland, Ohio; Indianapolis, Ind.; Newark, N. J.; Newburyport, Mass.; New York, N. Y.; Philadelphia, Pa.; Pittsburg, Pa.; Providence, R. I.; San Francisco, Cal., and Washington, D. C.

The Young Men's Christian Association gymnasia, as a class, do not compare favorably with college gymnasia, and chiefly so because they are placed in an out-of-the-way corner of the building, and are ill ventilated and poorly lighted. This criticism does not apply to all of them; but in too many cases the gymnasium, even in imposing and commodious Young Men's Christian Association buildings, is placed at or below the level of the ground. The Brooklyn association is to be commended for its plan of erecting a gymnasium annex, which is now building at an estimated cost of between $90,000 and $100,000. It is the intention of the projectors of this Brooklyn gymnasium to make it the best of its class.

BOSTON YOUNG MEN'S CHRISTIAN UNION GYMNASIUM.

At present the best specimens of the type are those of the Boston Young Men's Christian Association and the Boston Young Men's Christian Union. The Union gymnasium is on the whole the more worthy of the two of imitation, since it contains a large number of the Sargent developing appliances, and is under the medical direction of Dr. Sargent himself.

The following extracts from a recent circular indicate what are the distinctive features of this gymnasium:

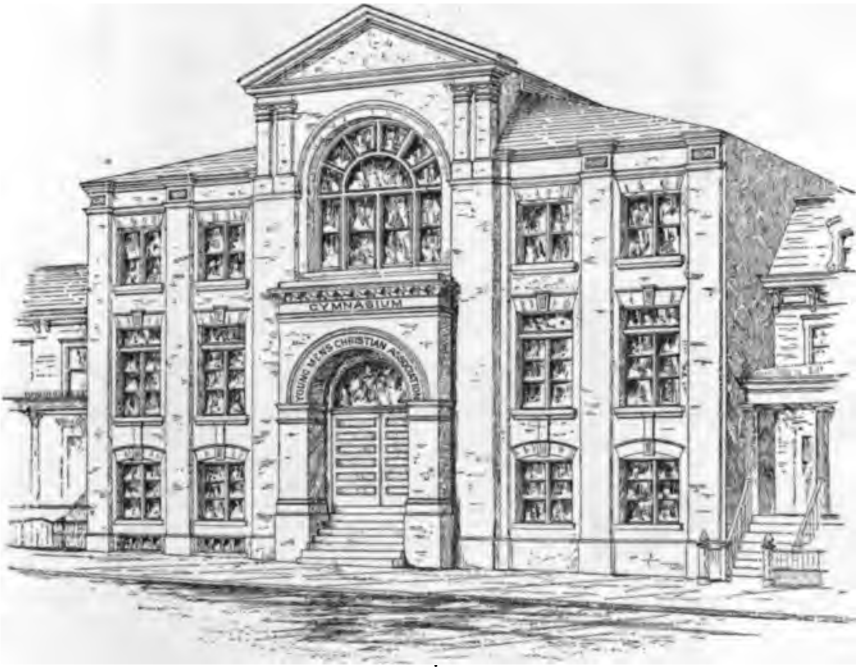
> The Union gymnasium is 136 feet long, 22 feet high, and has a floor space of 6,200 square feet, exclusive of dressing and bath rooms.
>
> The room is well lighted on every side, thoroughly ventilated, has indirect steam heat, and the exercising floor is above the street level.
>
> The dressing rooms are large and spacious, and contain over 900 lockers.
>
> The bathing facilities are ample, there being 13 sponge-bath rooms, 8 bowls, 3 tubs, and 1 shower room.
>
> A running track has been arranged on the main floor with a course of 26 laps to a mile, unobstructed by apparatus, and open to runners at all times during gymnasium hours.
>
> The management aim to make the gymnasium beneficial to all ages and to all conditions.
>
> By the use of the adjustable weights and appliances, the exercises can be adapted to the "strength of the strong and the weakness of the weak."
>
> Dr. Sargent will examine those who desire it, and make out a book with specific directions for exercise, diet, sleep, bathing, etc., based upon the data ascertained from the examination. Each book is furnished with a blank form; and those who wish may have their measurements entered, and their condition compared with the average man of the same age, weight, etc.
>
> Terms, including the Union membership (one dollar), and entitling to all its privileges:

For one year, entitling to use of gymnasium, after 7 P.M., and on holidays for such time as it may be open	$5 00
For one year, entitling to use of gymnasium at all times when open	8 00
Keys, to be refunded on return of same	50

> There is no extra charge for consultation with, and examination by, Dr. Sargent, instruction, use of baths and dressing closets in the large dressing rooms.
>
> Dr. Sargent will give during the fall and winter season a course of practical talks on "the theories and principles of physical training."
>
> The gymnasium is open from 8 A.M. to 9.45 P.M.

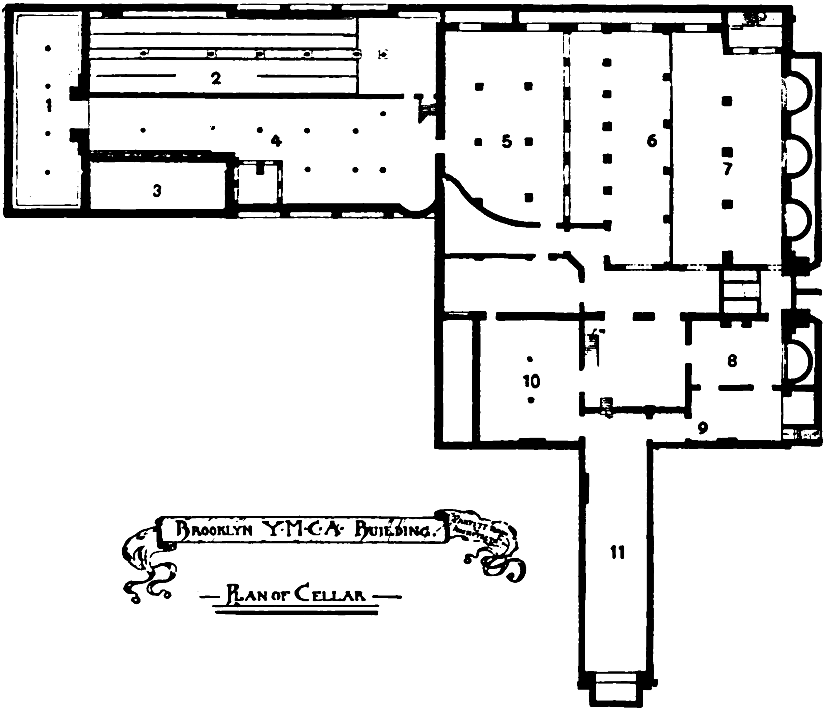
THE BROOKLYN YOUNG MEN'S CHRISTIAN ASSOCIATION GYMNASIUM.

This gymnasium, the best of its class, is now (1885) in course of construction. It constitutes a separate building in the nature of an annex to the Young Men's Christian Association building, whose entrance is on Bond street. The gymnasium building, which is 100 feet deep, has a frontage on Hanover place of 60 feet. The structure, which was

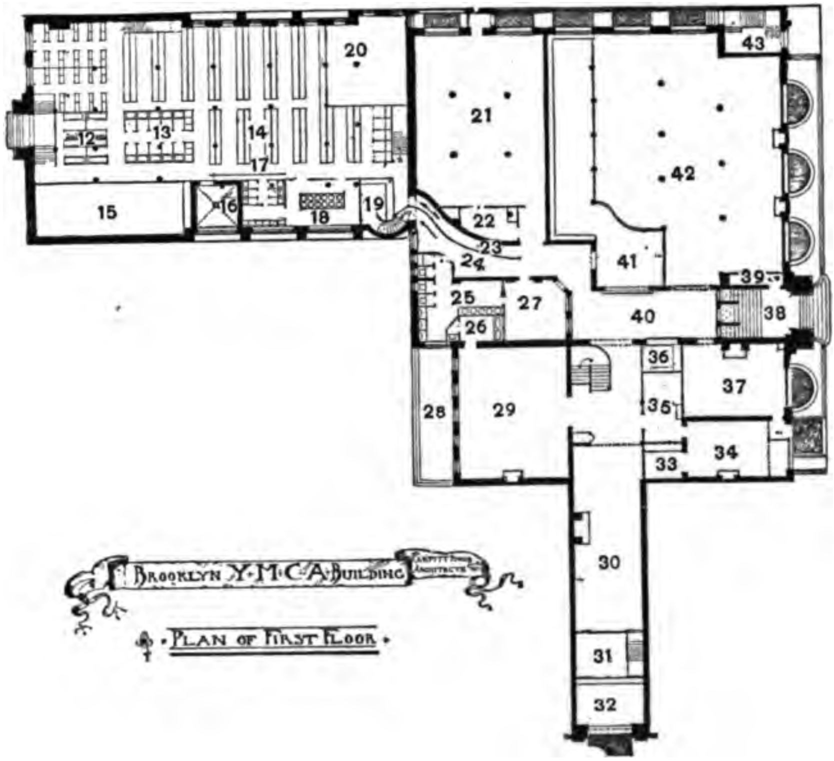


Hanover Place Front.

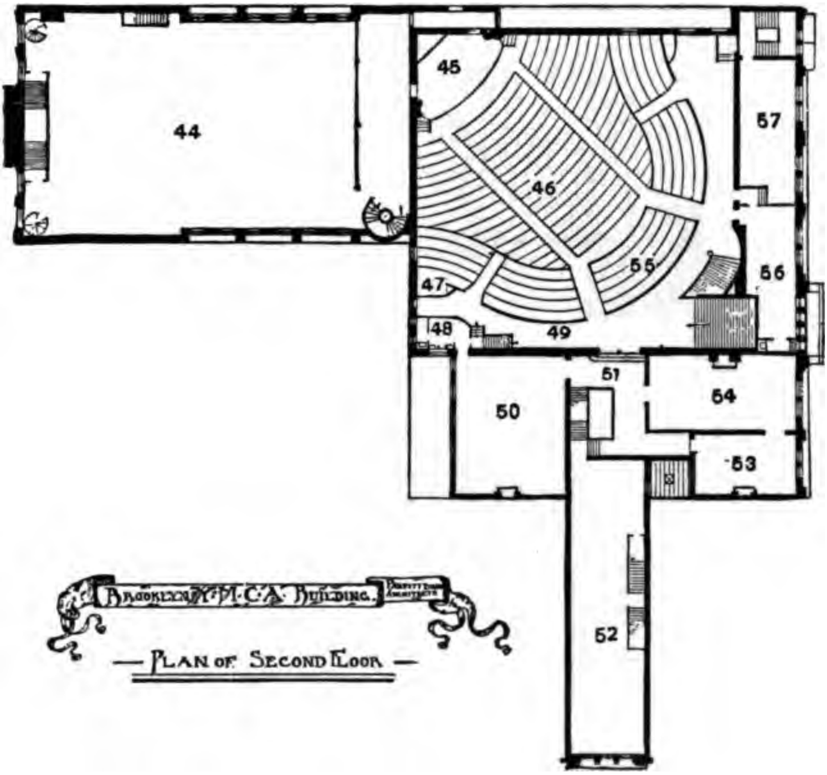
BROOKLYN Y. M. C. A. GYMNASIUM.



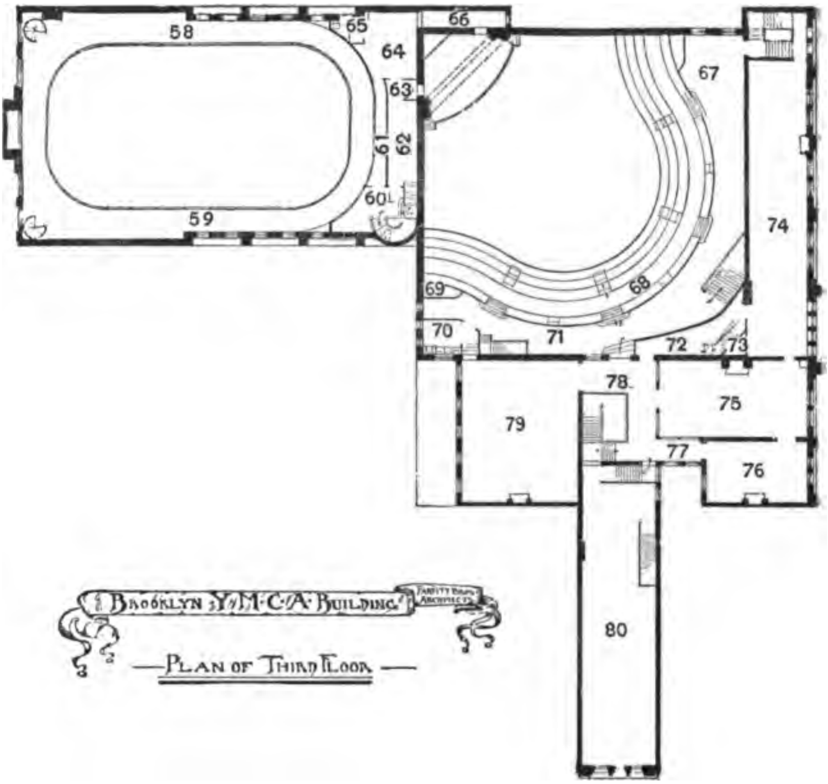
1. Boiler room, engine room, workshop, and well.
2. Four 80-feet bowling alleys.
3. Bottom part of swimming tank.
4. Coal cellar—to hold 300 tons.
5. Extra locker space.
6. Cellar.
7. Mechanical class room.
8. Room to stall bicycles.
9. Passage-way to boys' quarters—separate entrance, direct from the street.
10. Boys' meeting room.
11. Boys' gymnasium and play room.



12. Six hot and cold bath tubs.
13. Ten sponge baths.
14. Eight hundred locker space.
15. Swimming bath, 14×45.
16. Russian, shower, needle, and douche bath room.
17. Lavatory.
18. Washbowls.
19. Gymnasium instructor's office.
20. Bowling alley room.
21. Small lecture hall—for prayer meetings, Bible classes, &c.
22. Inquirers' room.
23. Private passage to gymnasium.
24. Passage to lavatories.
25. Lavatories.
26. Ladies' lavatory.
27. Cloak room; also for keeping of valuables of gymnasium members.
28. Area reserved for light and conservatory.
29. Members' parlor.
30. Reception and amusement room.
31. Inner vestibule.
32. Outer vestibule and main entrance to the building.
33. Office for committees.
34. General Secretary's private office.
35. Assistant Secretary's office.
36. Treasurer's office.
37. Board room.
38. Grand stairway to the main auditorium, with two fire-proof vaults beneath.
39. Ticket office.
40. Hallway.
41. Librarian's office and library.
42. Reading room.
43. Side entrance to janitor's rooms and exit from main hall.



44. Floor of gymnasium—all clear space.
45. Platform or stage.
46. Parquette.
47. Air vent.
48. Lavatories.
49. Lower foyer.
50. Class room.
51. Landing and passage.
52. Class room, or office for rent.
53. Class room.
54. Class room.
55. Balcony.
56. Ladies' retiring or cloak room.
57. Gentlemen's retiring or coat room.



58.
59. } Elevated running track in gymnasium.
60. Spectators' gallery.
61. Passage-way to retiring rooms of music hall.
62. Gentlemen's retiring room.
65. Lavatory.
66. Ladies' private entrance to the stage.
67. Side exit from hall.
68. Dress circle.
69. Air vent.
70. Lavatory.
71. Upper foyer.
72. Passage to janitor's room.
73. China closet.
74. Dining hall.
75. Class room.
76. Class room.
77. Passage.
78. Passage.
79. Class room.
80. Class room.

planned by Parfitt Brothers, architects, Brooklyn, is built of brick and terra cotta and Long Meadow red sandstone.

The first floor contains a locker room with about 200 public and 100 private lockers; also hot-water baths, sponge baths, large shower baths, and a swimming bath 45 feet by 14, besides lavatories and an instructor's office. In the basement are 4 bowling-alleys 80 feet long, 2 60-horse-power boilers, and a coal cellar of 300-tons capacity. A well 50 feet deep and 5 feet in diameter, calculated to yield 100 gallons of water per minute, has here been dug for the use of the baths, bowls, and closets.

The gymnasium is in the second story. It is 24 feet high, 54 feet wide, and 98 feet deep. The running track, which is suspended from the roof, is 5 feet wide and has 22 laps to the mile. Its floor is 8 feet above that of the gymnasium. The ceiling, which is of the open-roof description, is supported on 6 elliptical arches of wood, each built of 12 sections of 1 by 6 inch pieces of wood laid one over the other, bent and bolted into the shape desired.

It is worth noting that in the Bond street building the Brooklyn Young Men's Christian Association will provide a gymnasium and play-room especially suited for boys.

Future builders of gymnasia will do well to study the means employed in this gymnasium and in the Cornell University Gymnasium for supporting the roof by arches instead of by pillars, as much valuable floor-space has been sacrificed in the Hemenway, Pratt, and Lehigh gymnasia through the use of pillars and posts. Suspended running-tracks are to be preferred when they are practicable.

Following is as complete a statement as we are able to make of the facts regarding gymnasia belonging to the theological schools of America. The gymnasium belonging to the Hartford Seminary is the best of its class.

ARCHITECTS AND FURNISHERS OF GYMNASIA.

The following list of architects who have planned gymnasia is given for the convenience of those who may have occasion hereafter to build or remodel gymnasia:

Peabody & Stearns, of Boston, Mass., planned the Hemenway Gymnasium.

E. L. Roberts, 46 Broadway, New York City, planned the Pratt Gymnasium.

Addison Hutton, 400 Chestnut street, Philadelphia, planned the Lehigh University Gymnasium and the Bryn Mawr Gymnasium.

F. C. Withers, New York City, planned the National Deaf-Mute College Gymnasium.

G. B. Post, New York City, planned the Princeton College Gymnasium.

J. R. Richaud, ———, planned the Dartmouth College Gymnasium.

Charles Babcock, Professor of Architecture, Cornell University, planned the Cornell Armory and Gymnasium.

C. W. Clinton, New York City, planned the New York Athletic Club Building.

Parfitt Brothers, Brooklyn, N. Y., planned the Brooklyn Young Men's Christian Association Gymnasium.

Charles L. Carson, corner Charles and Lexington streets, Baltimore, planned the Johns Hopkins University Gymnasium and the Dickinson College Gymnasium.

The names of the most reliable manufacturers of gymnastic apparatus are:

American—

Dr. D. A. Sargent, Cambridge, Mass.

Boston Gymnasium Construction and Supply Company, A. H. Howard, Secretary, 9 Ashburton place, Boston, Mass.

Fred. Medart, 1206 North Main street, St. Louis, Mo.

John Gloy, 27 Johnson street, Chicago, Ill.

Foreign—

Julius Dietrich & Hannak, Chemnitz, Saxony.

A. Buczilowsky, 17 Köthen street, Berlin, Prussia.

A. A. Stempel, 75 Albany street, Regent's park, London, N. W., England.

Oscar Knofe, 26 Pancras road, King's cross, London, W. C., England.

MILITARY DRILL AND DISCIPLINE A PHYSICAL TRAINING.

"Solitary men dreaming in their corners," as well as the most severely practical men of affairs, when proposing schemes for the betterment of the "discipline of the common weal" through educational reforms, have frequently, perhaps usually, urged the value of military drill and discipline as a means of training young men.

VIEWS OF LUTHER AND POLE.

Martin Luther, while praising bodily exercises as a means to health and as a safeguard against "the temptations of the fiend," does not fail to commend them as needful for rendering "us Germans fit and always prepared for joining the army and for battle. For verily our boys will have to defend land and people and to be warriors."

Reginald Pole, when outlining to Master Lupset his idea of the "most noble institute that ever was devised in any common weal," declares that the nobility should "be constrained, by lawful punishment, to exercise themselves in all such things and feats of arms as shall be for the defense of our realm necessary; the which they should do with the same diligence that the plowmen labor and till the ground for the common food."

VIEWS OF MILTON.

John Milton, in his tractate on education, imagines an "institution of breeding, which should be equally good both for peace and war." "The exercise which I first commend," he says, "is the exact use of their weapon, to guard and to strike safely with edge or point. This will keep them healthy, nimble, strong, and well in breath; is also the likeliest means to make them grow large and tall, and to inspire them with a gallant and fearless courage, which being tempered with seasonable lectures and precepts to make them of true fortitude and patience, will turn into a native and heroic valor, and make them hate the cowardice of doing wrong. They must be also practiced in all the locks and gripes of wrestling, wherein Englishmen are wont to excel, as need may often be in fight to tug, to grapple, and to close. And this perhaps will be enough wherein to prove and heat their single strength." He further recommends that all the youth, while engaged in study "under vigilant eyes," should "about two hours before supper, by a sudden alarm or watchword, be called out to their military motions, under sky or covert according to the season, as was the Roman wont; first on foot, then, as their age permits, on horseback to all the art of cavalry; that having in sport, but with much exactness and daily muster, served out the rudiments of their soldiership in all the skill of embattling, marching, encamping, fortifying, besieging, and battering with all the helps of ancient and modern stratagems, tactics, and warlike maxims, they may, as it were out of a long war, come forth renowned and perfect commanders in the service of their country." The effect of classical studies and the lessons derived from the experiences of civil war are strangely mingled in this tractate.

MILITARY GYMNASTICS IN ENGLAND.

Gymnastics, in the Greek or German sense, have never been popular in the public schools of England, or with the devotees of manly sports outside of them; but volunteer military companies have sprung up at the schools and universities in recent years. In 1822, Captain Clias, who had been instrumental in introducing gymnastic training for recruits into the Swiss and French armies, introduced gymnastics into the British army and navy. For the period of two years and a half he was Professor of Gymnastics in the Royal Military Academy, at Woolwich. He occupied this post until September, 1825, when instruction in gymnastics was intrusted to non-commissioned officers. After a long period of disuse military gymnastics were revived in England—after the Crimean war. In 1861 a central school of gymnastics was established at Aldershot for the purpose of supplying instructors to the army. This action was taken in accordance with the recommendations of the report of a commission appointed in 1859 to examine into the systems of military gymnastics then in vogue on the Continent. Later, by order of Lord de Grey, gymnasia were built at all barracks.

MACLAREN'S SYSTEM OF GYMNASTICS.

The late Archibald Maclaren drew up the code of instruction which was adopted by the authorities. Mr. Maclaren's writings and teachings on physical education are the best that England has yet produced. The principles of physical training, as expounded by Mr. Maclaren, are essentially the same as those which lie at the basis of the Sargent system. The followers of each labor for the same ends, though by methods not always identical. A series of physical measurements, periodically made and carefully registered, was employed by Mr. Maclaren from the first. Similar measurements, it will be remembered, were instituted by Dr. Hitchcock, at Amherst, in 1861, the same year that Mr. Maclaren began his work in the British army. The Amherst measurements were, indeed, intended to determine the rate of growth and development; but they served for statistical rather than diagnostic purposes. Mr. Maclaren used the data obtained by his examinations in determining the kind and amount of exercise to be required of his pupils.

PUBLICATIONS BY MR. MACLAREN.

Besides his "Military System of Gymnastic Exercises for the Use of Instructors", originally published in 1862, two other works by Mr. Maclaren, viz., "Training in Theory and Practice", and "Physical Education", have been published respectively by Macmillan & Co. and the Clarendon Press. The latter work well deserves the unstinted praise bestowed upon it by that high authority on hygiene, Dr. E. A. Parkes, who says of it that it "should be in the hands of every one." Its Part I, comprising 101 pages taken up with an essay upon "Growth and Development," is a lucid and admirable exposition of the modern views of physical training, and contains apt characterizations of the German and French systems of military gymnastics, which were adopted respectively in the years 1845 and 1847. Dr. Ball, in Buck's *Hygiene and Public Health*, New York, 1879, declares that Mr. Maclaren's code of instruction is much less elaborate than the French system, while it is more thorough and practical than the German, and is based upon the sound principle that the first requisite is to develop physical power by a simple and *gradually progressive* course of exercises, after which the practical application of this acquired power to the special duties of the soldier becomes a comparatively easy task.

DR. PARKES ON MACLAREN'S CODE.

As yet no such comprehensive system as that contained in the Maclaren code has been adopted for the United States Army. The best summary account of this code that has come under our notice is the following, contained in the sixth edition of Parkes's "Practical Hygiene", pp. 584–585:

> The instructions have two great objects: (1) To assist the physical development of the recruit; (2) to strengthen and render supple the frame of the trained soldier. Every recruit is now ordered to have three months' gymnastic training during (or, if judged expedient by a medical officer, in lieu of part of) his ordinary drill. Two months are given before he commences rifle practice, and one month afterward. This training is superintended by a medical officer, who will be responsible that it is done properly, and who will have the power to continue the exercises beyond the prescribed time, if he deems it necessary. The exercise for the recruit is to last only one hour a day, and in addition he will have from two to three hours of ordinary drill.
>
> The trained infantry soldier is ordered to go through a gymnastic course of three months' duration every year, one hour being given every other day. The cavalry soldier is to be taught fencing and sword exercise in lieu of gymnastics.
>
> The exercises have been arranged with great care, and present a progressive course of the most useful kind. The early exercise commences with walking and running; leaping, with and without the pole, follows; and then the exercises with apparatus commence, the order being the horizontal beam, the vaulting bar, and the vaulting horse. All these are called exercises of progression. The elementary exercises follow, viz., with the parallel bars, the pair of rings, the row of rings, the elastic ladder, the horizontal bar, the bridge ladder, and the ladder plank. Then follow the advanced exercises of climbing on the slanting and vertical pole, the slanting and vertical rope, and the knotted rope.
>
> Finally, the most advanced exercises consist of escalading, first against a wall, and then against a prepared building.

It might be thought that so complete and methodical a system as that of Mr. Maclaren, its good results being well known, would have commended itself to the teachers of boys. But so late as 1869, Mr. Maclaren calls attention to the fact that, excepting the two military colleges of Woolwich and Sandhurst, and Radley College, not one of the large educational establishments in England was provided with a regularly organized gymnasium with properly qualified teachers. The case stands only slightly better now.

EARLY SCHEMES FOR MILITARY TRAINING IN THE UNITED STATES.

On January 21, 1790, President Washington transmitted to the first Senate of the United States a comprehensive report from General H.

Knox, the Secretary of War, on a plan for "a national system of defense adequate to the probable exigencies of the United States, whether arising from internal or external causes." In passing we may remark that this was seven months prior to the penning of Dr. Rush's eulogy of agricultural and mechanical labor as an amusement. Among the principles on which Secretary Knox based his plan are the following:

> That every man of the proper age and ability of body is firmly bound, by the social compact, to perform personally his proportion of military duty for the defense of the state.
>
> That all men of the legal military age should be armed, enrolled, and held responsible for different degrees of military service.

PLAN OF SECRETARY KNOX, 1790.

The plan called for the enrollment of those liable to bear arms into three classes, described as follows:

> The first class shall comprehend the youth of eighteen, nineteen, and twenty years of age, to be denominated the advanced corps. The second class shall include the men from twenty-one to forty-five years of age, to be denominated the main corps.
>
> The third class shall comprehend, inclusively, the men from forty-six to sixty years of age, to be denominated the reserved corps.
>
> *Of the advanced corps.*
>
> The advanced corps are designed not only as a school in which the youth of the United States are to be instructed in the art of war, but they are, in all cases of exigence, to serve as an actual defense to the community.
>
> The whole of the armed corps shall be clothed, armed, and subsisted at the expense of the United States; and all the youth of the said corps in each State shall be encamped together, if practicable, or by legions, which encampments shall be denominated the *annual camps of discipline*. The youth of *eighteen* and *nineteen* years shall be disciplined for *thirty* days successively in each year; and those of twenty years shall be disciplined only for ten days in each year.
>
> At the age of twenty-one years, every individual having served in the manner and for the time prescribed, shall receive an honorary certificate thereof, on parchment, and signed by the legionary general and inspector. And the said certificate, or an attested copy of the register aforesaid, shall be required as an indispensable qualification for exercising any of the rights of a free citizen, until after the age of —— years. No amusements should be admitted in camp but those which correspond with war: the swimming of men and horses, running, wrestling, and such other exercises as should render the body flexible and vigorous.

This plan failed of adoption, although the need of a well-trained militia had been sharply and abundantly emphasized by the events of the revolutionary war. The failure of this plan was attributed to the great expense and the administrative difficulties which it was believed it would entail.

MR. HARRISON'S PLAN, 1817 AND 1819.

In 1817, in a report on the reorganization of the militia, made to the House of Representatives by Mr. Harrison, it was recommended that "military instruction should not be given in distant schools, but that it should form a branch of education in every school within the United

States; that a corps of military instructors should be formed to attend to the gymnastic and elementary part of education in every school in the United States, whilst the more scientific part of the art of war should be communicated by professors of tactics, to be established in all the higher seminaries."

It does not appear that this scheme, or anything like it, ever received the sanction of law, although it was again brought forward for adoption in 1819.

UNITED STATES MILITARY ACADEMY.

Meanwhile the United States Military Academy at West Point, in New York, had been instituted for the professional training of army officers. Yet the bitter lessons of the war of the Revolution had to be enforced by those of the war of 1812 before Congress could be induced to make anything like adequate provision for such training.

WASHINGTON'S VIEWS.

His experiences as commander-in-chief in the war of the Revolution caused Washington when President to suggest to Congress in 1793, and again in 1796, the establishment of an academy for "the study of those branches of the military art which can scarcely ever be obtained by practice alone." Washington's suggestions bore no immediate fruit, but his views on this subject were adopted by his successor.

REPORT OF SECRETARY JAMES MCHENRY, 1800.

Mr. McHenry, of Maryland, Secretary of War under President John Adams, made an elaborate report in 1800, recommending the establishment of a military academy, to consist of the fundamental school, the school of engineers and artillerists, the school of cavalry and infantry, and the school of the navy. Mr. McHenry's ideas were far in advance of his time, and were little regarded until after the war of 1812. In 1802 the United States Military Academy was established by law, but in name only, for, prior to 1817, there was but little system or regularity observed in the instruction given. Cadets were admitted without examination, and without the least regard to their age or qualifications. Sylvanus Thayer, who became superintendent in 1817, in the course of the five years following established in all its essential features the course of instruction which has become identified with the name of West Point.

PHYSICAL TRAINING AT WEST POINT AND ANNAPOLIS.

Bodily training, under the heads of military instruction and sword exercise, has received marked attention from the first. Dancing is now regularly taught, and gymnastics and swimming have at times been regular branches of instruction. The United States Naval Academy dates from the year 1845. Both at West Point and at Annapolis the course of study is characterized by an extended, varied, and exacting system of bodily exercise, as embraced in the various drills and branches of practical instruction. Weaklings in body are prevented from entering either academy by the requirement, which has been in force for many years, that all applicants failing to pass a satisfactory physical examination at the hands of a medical board shall be rejected. Idlers and dolts lose their commissions. The absolute control and constant supervision and inspection to which all cadets are subjected, as regards deportment, dress, studies, exercise, recreation, diet, and rest, are productive of a vigorous manliness which is much less uniformly found in the graduates of other institutions. In all other professional schools and in the majority of our colleges the training is less steadily and successfully directed toward securing mental power, moral strength, and bodily ability.

The writer is strongly convinced that the best that has yet been accomplished in the United States, in the province of physical training, has been accomplished at West Point and at Annapolis; and, while recognizing fully that the systems there in operation could not be imposed, without undergoing many modifications, upon any considerable portion of the collegiate youth of the country, he cannot forbear recommending a careful study of those systems to all who are responsible for the training of boys between the ages of twelve and twenty.

It is eminently to be desired that the data on record in the War and Navy Departments touching the physical condition, academic standing, and professional success and career of all cadets, from the time of their admission to the academy till the termination of their service by discharge, resignation, or death, should be statistically digested and discussed. The publication of these records could not fail to be helpful to those engaged in the study of the natural history of the student class: it would be of very great pedagogical value.

The published reports of Medical Director A. L. Gihon, U. S. N., upon the hygiene of the Naval Academy and on the rates of growth of cadets before and after entering the academy, serve admirably to indicate what might be done in this direction. A satisfactory comparison of the results thus far obtained under the Amherst, Sargent, Maclaren, West Point, and Annapolis systems of physical training is as yet hardly feasible.

CAPTAIN PARTRIDGE'S MILITARY SCHOOLS, 1820–'53.

Alden Partridge, captain of engineers in the United States Army, who was the immediate predecessor of General Sylvanus Thayer as Superintendent of the Military Academy, seems to have been the first person to found an institution modeled after that at West Point. Captain Partridge left the Military Academy in 1817, and in 1818 resigned from the military service of the Government. In a lecture delivered by him in 1820 on what he conceived to be the deficiencies of superior education as then conducted, Captain Partridge spoke as follows:

> Another defect in the present system is the entire neglect, in all our principal seminaries, of physical education. The great importance and even absolute necessity of a regular and systematic course of exercise for the preservation of health, and confirming and rendering vigorous the constitution, must be evident to the most superficial observer. It is for want of this that so many of our most promising youths lose their health by the time they are prepared to enter on the grand theater of active and useful life. That the health of the closest applicant may be preserved, when he is subjected to a regular and systematic course of exercises, I know from practical experience: and I have no hesitation in asserting that in nine cases out of ten it is just as easy for a youth, however hard he may study, to attain the age of manhood with a firm and vigorous constitution, as it is to grow up puny and debilitated, incapable of either bodily or mental exertion.

PHYSICAL TRAINING UNDER CAPTAIN PARTRIDGE.

Captain Partridge opened his American Literary Scientific Academy at Norwich, Vt., his native town, September 4, 1820. In a card published in April, 1825, on the eve of his departure for Middletown, Conn., for the purpose of reopening his seminary in that place, Captain Partridge set forth the results of his labors at Norwich. He claimed that his plan of "connecting mental improvement with a regular course of bodily exercises and the full development of the physical powers, the whole conducted under a military system of discipline," had succeeded beyond his most sanguine expectations. Out of 480 pupils who had entered the seminary from 21 States, only one had died there. "Many of my pupils, and those the closest applicants to study," he says, " walk with facility forty miles per day. On a recent excursion to the summit of the most elevated of the White Mountains, with a party of 50 of my pupils, a large portion of them walked, on the last day, 42 miles. Belonging to this party was a youth of but twelve years of age, who walked the whole distance, 160 miles, carrying his knapsack, and returned in good health." It would be interesting to know the ultimate stature of this youth.

Captain Partridge remained only three years at Middletown. He was doubtless impelled to abandon his seminary there from the refusal of the legislature of Connecticut to charter the institution as a college. He was instrumental, in 1834, in rehabilitating the institution at Norwich, which became known as "Norwich University", and in establishing military schools at Portsmouth, Va., in 1839, at Brandywine Springs, Del., 1853, and at Bristol, Pa., in 1853, the year of his death.

MILITARY SCHOOLS BEFORE 1861.

A considerable number of military schools and colleges, additional to those above mentioned, were organized before the War of the Rebellion. The more important of them were established in the Southern States, and were in several cases subsidized by the State. This was notably the case in Virginia, South Carolina, Louisiana, Kentucky, and Alabama. The Virginia Military Institute, at Lexington, Va., the Military Institute at Frankfort, Ky., and the Louisiana State Institute, at Alexandria, La., should be mentioned in this connection. It has been estimated that "one-tenth of the Confederate armies was commanded by the *élèves* of the Virginia Military Institute, at Lexington, embracing 3 major-generals, 30 brigadier-generals, 60 colonels, 50 lieutenant-colonels, 30 majors, 125 captains, 200 to 300 lieutenants". General "Stonewall" Jackson was long a professor in the Virginia Military Institute. General W. T. Sherman, of the United States Army, was in 1861 the head of the Louisiana State University, which had been organized on a military basis in the previous year. At the North the military plan of education was chiefly adopted by the proprietors of private schools for boys. Among the principal schools of this description established prior to 1861 we may mention, Russell's Collegiate and Commercial Institute, at New Haven, Conn.; the Highland Military Academy, Worcester, Mass.; Claverack College, Claverack, N. Y.

EFFECT OF THE WAR IN STIMULATING MILITARY DRILL.

Once the war opened, military drill assumed a new and unprecedented interest in the eyes of school authorities. The educational literature of that period teems with schemes for the introduction of gymnastics and military drill into public school courses. As early as 1861 military drill was introduced into a portion of the public schools in the city of Bangor, Me.; and the State of New Jersey, about the same time, made an appropriation of money for military instruction in her normal school.

MILITARY DRILL IN BOSTON SCHOOLS.

Elementary military drill was experimentally introduced into the Public Latin, English High, Eliot, and Dwight Schools for boys in Boston in 1863. It has since been eliminated from the grammar schools, to which class the Eliot and the Dwight belong, but has been introduced into all the high schools of the city for males. Two drills a week, of an hour each, are required of all boys able to carry a musket.

The new Public Latin and English High School house in Boston, which was opened in February, 1881, is provided with a large and elegant drill hall, and a commodious and well-furnished modern gymnasium. The gymnasium remains practically worthless, through the inability or unwillingness of the school authorities to grapple with the problem of securing proper instructors. The publications of the Boston school committee contain several elaborate reports, filled with commendable expressions of sentiment on the subject of physical education; also a few notes and regulations regarding gymnastic and calisthenic exercises; but their actual working programme embraces almost nothing worthy of imitation as regards genuine development and training of the bodily powers. Military drill has also been introduced, to a limited extent, into the public schools of other American cities; notably in those of Baltimore, Md., and Washington, D. C.

MILITARY TRAINING ORDAINED BY THE MORRILL ACT, 1862.

Congress, under the stress of war, passed, in July, 1862, the so-called Morrill Act, granting thirty thousand acres of the public lands for each of its Senators and Representatives to every State which should "provide at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts." Under the provisions of this act, as originally passed and since amended, there have been detailed, as we are informed by the Adjutant-General of the army, one hundred and forty-two different officers of the army for the purpose of teaching military tactics and science. The following extracts and tables are taken from the Report of the Adjutant-General, published October 30, 1883:

ARMY OFFICERS AS MILITARY INSTRUCTORS AT COLLEGES.

The tables subjoined exhibit the apportionment of details, corrected to October 1, 1883, and the data contained in the reports of the several officers performing the duties of professors of tactics and military science.

The law authorizing the detail of officers of the army at a limited number of colleges and universities evidently contemplated that the services of the military professors would be the means of securing a number of youths well instructed in military knowledge, who when occasion required could efficiently exercise command in the militia of their respective States. A better plan could scarcely have been devised, and, carried out faithfully, will prove a powerful factor in insuring the thorough efficiency of that branch of the military service.

Section 1225 of the Revised Statutes empowers the President, upon the application of a college or university having capacity to educate at the same time not less than 150 male students, to detail an officer of the army to act as president, superintendent, or professor thereof. In establishing the minimum number of students that could be educated at a college or university, the law no doubt contemplated that not only such institutions should have capacity for educating a certain number of youths, but that at least the minimum number prescribed be actually under instruction. This point the War Department has no means of verifying except from the reports required of the military professor; and a glance at the second table submitted shows that a minority of the colleges or universities named therein actually educate 150 students. It is earnestly recommended that, if necessary to prevent cavil, the law be amended so as to require applications for the detail of a military professor to be accompanied by satisfactory proof that at least 150 male pupils above the age of fifteen are actually present at the institution.

The colleges and universities at which officers of the army may be detailed should be designated by the governor of the State in which located, as being most interested in the progress of the State and its institutions, and possessing greater means of information necessary to wisely determine the question of selection.

The section of the Statutes above referred to prescribes that the officer detailed shall act as "president, superintendent, or professor." He should, therefore, be a recognized member of the Faculty, with equal vote, and not simply a prefect of discipline. This is of the utmost importance to secure the best results, as well as to preserve the dignity of the position of the professor of tactics and military science.

Drills should not be held outside of regular hours, but considered as part of the curriculum of instruction.

Finally, I am of opinion that officers should be forbidden to instruct in any other branch of education, except in so far as the instruction has direct reference to military knowledge.

TABLE NO. 14.—*Apportionment of details at colleges, universities, etc., under section 1225, Revised Statutes.*

States, by groups.	Aggregate population of States and groups.	No. of officers to which entitled.	No. on duty in State or group.	Officers detailed.	Colleges, &c., at which detailed.	Expiration of detail.
Maine	648, 945			Second Lieut. Edgar W. Howe, Seventeenth Infantry	Maine State College, Orono	July 1, 1885.
New Hampshire	346, 984					
Vermont	332, 286			First Lieut. H. E. Tutherly, First Cavalry	University of Vermont, Burlington	July 1, 1884.
Massachusetts	1, 783, 012			Second Lieut. V. H. Bridgman, Second Artillery	Massachusetts Agricultural College, Amherst	July 1, 1884.
Connecticut	622, 683					
Rhode Island	276, 528					
	4, 010, 438	3	3			
New York	5, 083, 810	3	3	First Lieut. H. W. Hubbell, jr., First Artillery	Union College, Schenectady, N. Y	July 1, 1886.
				First Lieut. W. S. Schuyler, Fifth Cavalry	Cornell University, Ithaca, N. Y	July 1, 1886.
				First Lieut. C. A. L. Totten, Fourth Artillery	Cathedral School of St. Paul, Garden City, L. I.	July 1, 1886.
Pennsylvania	4, 282, 786			First Lieut. W. P. Duvall, Fifth Artillery	Pennsylvania Military Academy, Chester	July 1, 1884.
				First Lieut. J. W. Pullman, Eighth Cavalry	Allegheny College, Meadville, Pa	July 1, 1886.
				Second Lieut. J. A. Leyden, Fourth Infantry	Pennsylvania State College, Center County	July 1, 1886.
New Jersey	1, 130, 983			Second Lieut. F. L. Dodds, Ninth Infantry	Rutgers College, New Brunswick, N. J	July 1, 1885.
Delaware	146, 654					
Maryland	934, 632					
	6, 495, 055	4	4			
West Virginia	618, 443					
Virginia	1, 512, 806			Second Lieut. Geo. Le R. Brown, Eleventh Infantry	Hampton Nor. and Agric. Inst., Hampton, Va.	July 1, 1884.
North Carolina	1, 400, 047			Second Lieut. J. Batchelder, Twenty-fourth Infantry	Bingham School, Orange County, N. C	July 1, 1886.
	3, 531, 296	2	2			
South Carolina	995, 622			Second Lieut. E. M. Weaver, jr., Second Artillery	South Carolina Military Institute, Charleston	July 1, 1886.
Georgia	1, 539, 048					
	2, 534, 670	1	1			

	1, 530, 145	1	1			
Mississippi	1, 131, 592			Second Lieut. W. L. Buck, Thirteenth Infantry	Agricultural and Mechanical College of Mississippi, Starkville.	July 1, 1886.
Louisiana	940, 103					
	2, 071, 695	1	1			
Texas	1, 592, 574			First Lieut. Charles J. Crane, Twenty-fourth Infantry	Agricultural and Mechanical College of Texas, near Bryan.	July 1, 1885.
Arkansas	802, 564					
	2, 395, 138	1	1			
Tennessee	1, 542, 463	1	1	Second Lieut. R. W. Dowdy, Seventeenth Infantry	University of the South, Sewanee, Tenn	July 1, 1886.
Kentucky	1, 648, 708	1	1	First Lieut. C. R. Tyler, Sixteenth Infantry	Agric'l and Mech'l College of Ky., Lexington	July 1, 1886.
Ohio	3, 198, 239	2	1	First Lieut. George Ruhlen, Seventeenth Infantry	Ohio State University, Columbus	July 1, 1884.
Indiana	1, 978, 362	1	1	Second Lieut. J. B. Goe, Thirteenth Infantry	Indiana Asbury University, Greencastle	July 1, 1886.
Michigan	1, 636, 331	1	1	Second Lieut. H. A. Schroeder, Fourth Artillery	Michigan Military Academy, Orchard Lake	July 1, 1886.
Illinois	3, 078, 769	2	2	Second Lieut. C. G. Starr, First Infantry	S. Illinois Normal University, Carbondale	July 1, 1886.
				Second Lieut. C. McClure, Eighteenth Infantry	Illinois Industrial University, Champaign	July 1, 1886.
Wisconsin	1, 315, 480	1	1	Second Lieut. G. N. Chase, Fourth Infantry	University of Wisconsin, Madison	July 1, 1885.
	14, 398, 352					
Missouri	2, 168, 804			Second Lieut. John J. Haden, Eighth Infantry	University of Missouri, Columbia	July 1, 1884.
Kansas	995, 966			First Lieut. Albert Todd, First Artillery	Kansas State Agricultural College, Manhattan	July 1, 1884.
Colorado	194, 649					
	3, 359, 419	2	2			
Iowa	1, 624, 620			First Lieut. E. C. Knower, Third Artillery	Iowa State University, Iowa City	July 1, 1886.
				First Lieut. S. R. Jones, Fourth Artillery	Cornell College, Mount Vernon, Iowa	July 1, 1886.
Minnesota	780, 806					
Nebraska	452, 433					
	2, 857, 859	2	2			
California	864, 686			Second Lieut. J. A. Hutton, Eighth Infantry	University of California, Berkeley	July 1, 1886.
Oregon	174, 767					
Nevada	62, 265					
	1, 101, 718	1	1			

TABLE No. 15.— *ilitary instructors*

Universities and colleges.	Over 15 years of age.			Average attendance.		Aptitude of pupils.	Interest manifested by Faculty.
				Artillery drills.	Infantry drills.		
Maine State College, Orono	54	....		......	40	Good	Very good.
University of Vermont, Burlington.	73	....		15	64	Excellent .	Excellent.
Massachusetts Agricultural College, Amherst.	65	....		28	61	Good	Marked.
Union College, Schenectady, N. Y..	....	....	....	......	......	....	
Cornell University, Ithaca, N. Y ...	227	....		27	185	Good	Good.
Cathedral School of St. Paul, Garden City, Long Island, N. Y.	....	....	......	......	......	....	
Pennsylvania Military Academy, Chester.	112	19	131	......	131	Very good	Commendable and unremitting.
Allegheny College, Meadville, Pa..	....	....	......	......	......	....	
Pennsylvania State College, Center County.	....	....	......	......	......	....	
Rutgers College, New Brunswick, N. J.	126	....	126	......	35	Good	Good.
Hampton Normal and Agricultural Institute, Virginia.	310	33	343	42	170	Very good	Satisfactory.
Bingham School, Orange County, North Carolina.	....	....	......	......	......	....	
South Carolina Military Institute, Charleston.	....	....	......	......	......	....	
East Florida Seminary, Gainesville, Fla.	51	27	78	27	48	Good	Very great.
Agricultural and Mechanical College of Mississippi, Starkville.	185	6	191	(*)	(*)	Good	Rather negative.†
Agricultural and Mechanical College of Texas, near Bryan.	229	5	234	16	......	Good	Good.
University of the South, Sewanee, Tenn.	104	22	126	20	51	Fair	Satisfactory.
Agricultural and Mechanical College of Kentucky, Lexington.	143	20	163	......	119	Good	Good.
Ohio State University, Columbus...	280	(*)	280	42	150	Fair	Very satisfactory.
Indiana Asbury University, Greencastle.	280	30	310	117	117	Good	Very good.
Michigan Military Academy, Orchard Lake.	78	16	94	45	64	Not good..	Not good.
Southern Illinois Normal University, Carbondale, Ill.	64	....	64	17	58	Very good	Not good.
Illinois Industrial University, Champaign.	214	....	214	65	70	Good	Very satisfactory.
University of Wisconsin, Madison.	....	....	......	......	......	....	
University of Missouri, Columbia..	400	25	425	14	31	Good	Fair.
Kansas State Agricultural College, Manhattan.	117	2	119	......	20	Good	Good.
Iowa State University, Iowa City..	151	....	151	22	102	Average ..	Very indifferent.
Cornell College, Mount Vernon, Iowa.	....	....	......	......	......	....	
University of California, Berkeley..	....	....	......	......	......	....	

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* Not stated.

† Great interest shown and much assistance given in military discipline; found essential to control of pupils.

Though the Report of the Commissioner of Education does not group military schools by themselves, an examination of his Report for 1882–'83 shows that there were at least thirty institutions, other than those mentioned in the above list, in which military drill and discipline formed an essential feature.

During the year ending July 1, 1884, there were thirty-three officers of the army on duty at colleges, universities, and schools of superior instruction for young men.

ATHLETIC SPORTS IN THE UNITED STATES.

THE PRESENT CONTRASTED WITH THE PAST.

The grim and unjoyous ideals of the generations that conquered the wilderness and laid the foundation of the Republic have ceased to actuate the mass of the community, if we may judge from the practices which now obtain all over the country with regard to recreation and amusements.

The value of play is a favored theme with writers on hygiene and education. The ardor and activity displayed by the undergraduate world in games and exercises once frowned upon by Faculties and boards of trust because of their "vain, idle, and flesh-pleasing" qualities, have become so great that it is the fashion in certain quarters to speak of many colleges as if they were schools for ball-players, oarsmen, and athletes. There would be more point to such satire if the interest in athletics, which seems to strengthen year by year, were confined to the student class, instead of pervading the community as a whole. It is too often overlooked that the growth of college athletics has been stimulated and shaped by forces whose effects are equally, if not more strongly, marked on the non-scholastic classes of our population. Exhibitions and contests of every description which would not have been licensed or tolerated, much less pecuniarily supported, thirty years ago, now yield quick and large returns in popularity and cash to their promoters. Never, before the War and the profound changes that it has wrought upon the American mind and manners, would it have been possible for a single college class, or even a single college, to have raised $5,000 in one year for the maintenance of its representative athletes. Such a draft upon the imagination, as well as upon the pockets of the college public, would inevitably have gone to protest, and for precisely the same reasons that would have entailed disfavor and bankruptcy upon almost any of the professional athletic organizations which now flourish so on every hand that simply to name and classify them would prove wearisome.

ATHLETICS STIMULATED BY THE WAR.

The disbanded armies of the Republic furnished a large contingent of students who had been subjected to strenuous physical training, to the preparatory schools and colleges during the decade succeeding the war. The influence exerted by this contingent in reviving and developing the interest in physical culture, whose beginnings in the fifties and early sixties we have already noted, has been, perhaps, even more potent in the department of athletics than in those of gymnastics and military drill. The history of athletics in America has not yet been written, and it is not our purpose to attempt it here; but it would be a grave omission in a survey of physical training in American colleges and universities not to consider the salient features and tendencies of college athletics.

COLLEGE ATHLETICS.

The growth of college athletics within very recent years has led to a very general and somewhat heated discussion regarding them. In the last year (1884), especially, the question of their regulation has become a burning one with more than one Faculty. That the question should have assumed its present proportions is due to the fact that the athletic interest has been developed and organized chiefly through the efforts of the students themselves, and in accordance with their own notions of what is fitting and desirable. The general weakening, amounting sometimes to absolute break-down, of paternal government in our colleges, serves to complicate the difficulties in those institutions where the governing boards find themselves suddenly called upon to regulate abuses whose development they have been too short-sighted to prevent.

COLLEGE ATHLETIC ORGANIZATIONS.

Athletics have been carried to a higher degree of development and specialization at Yale, Harvard, and Princeton, than at any other colleges in the country. The accompanying statement (Table No. 16) has been prepared from authoritative returns made to the compiler of this Report. It is intended to set forth the status of the athletic interest in the colleges named during the year 1882–'83. It is followed by a summary statement (Table No. 17), which indicates in a measure the number and activity of the athletic organizations maintained by the students of seven less prominent colleges. It will be noticed that these are chiefly eastern colleges. Neither the general nor college public at the South manifests much interest in athletics or gymnastics. The best gymnasium building in the South is at Vanderbilt University, Nashville, Tenn., and a languid interest in athletics, more particularly in boating, exists at the University of Virginia. Military drill is in vogue in many places in the South, but athletic *organizations* comparable with those below noted do not exist. It may be said, in general, concerning western colleges, that physical education, both on its formal or gymnastic side and on its recreative or athletic side, is still in its embryonic stage.

TABLE No. 16.—*Statement concerning the athletic organi-*

Names of student organizations for athletic sports, in 1882-'83—	Year it was established.	Number of members in 1882-'83.	Nature and value of property owned.	Cost of maintenance in 1882-'83.	Amount of funds raised. [1] Earnings. [2] Subscriptions, &c.
At Yale College, New Haven, Conn., with 1,080 *students.*					
Base-ball club	1865	1,000		$6,863 38	[1]$5,457 15 [2]1,797 00
Boat club	1852	1,000	*a* $16,000 *b* 5,000	7,348 86	[1]1,322 11 [2]5,926 87
Foot-ball club	1872	1,000		2,689 80	[1]1,329 65 [2]382 00
Lacrosse club	1882	1,000		574 00	[1]225 05 [2]349 95
Athletic association	1876	1,000		400 00	
Tennis club	1882	1,000		25 00	
Dunham Boat Club	1879	22	*b* 700		
Bicycle club	1883	29			
Hare-and-hounds club	1882	56			*c* 1,258 25
Yacht club	1882	48			
Totals				17,901 04	18,048 03
Balance					146 99
At Harvard University, Cambridge, Mass., with 1,428 *students.*					
Base-ball association	1865	Whole university.	Uniforms, bats, balls.	4,500 00	[1]2,600 00 [2]1,900 00
Boat club	1866	400	*d* 3,500 *b* 4,500	5,000 00	*e* [1]2,764 00 [2]3,342 00
Foot-ball association	1873	Whole university.		3,655 62	[1]2,050 00 [2]857 00
Lacrosse association	1878	30 players.		350 00	[1]175 00 [2]175 00
Athletic association	1874	775	322	1,653 00	[1]1,025 00 [2]2,775 00
Tennis association	1880				
Bicycle club	1879 or 1880	91		150 62	[1]150 62
Cricket club		60		233 20	[2]233 20
Polo club	1883	12			
Shooting club	1883	60			
Totals				15,542 44	18,046 82
Balance					2,504 38
At Princeton College, Princeton, N. J., with 500 *students.*					
Base-ball association		Open to all students without payment of dues.			
Boating association			*a* 3,500 *b* 1,500	1,200 00	[2]1,200 00
Foot-ball association				1,975 00	[1]2,045 94
Lacrosse association				322 11	[1]130 52 [2]101 00
Athletic association	1870			755 06	[1]816 32
Totals				4,252 17	4,293 78
Balance					41 61

a Boat house. *b* Boats, &c. *c* Balance from previous year.

tions at Yale, Harvard, and Princeton in 1882–'83.

Times presented n contests n town in 1882–'83.	Times represented in contests out of town in 1882–'83.	Number of contests won by them.	Number of contests lost by them.	Remarks.
18	14	20	12	Hamilton park, valued at $80,000, was rented for matches and practice purposes at a rental amounting to one-quarter of gross gate receipts. The Yale Field Corporation now owns twenty-nine acres of land inclosed and fitted for field and track athletics. The names of the colleges whose athletes contested with those of Yale in championship matches in 1882–'83 are Amherst, Brown, Harvard, and Princeton. (This list is incomplete.) In the six years ending 1882–'83 the Yale foot-ball team did not suffer a defeat, and the base-ball club held the college championship for five years of the six, *i. e.*, during the entire period of its belonging to the American Base-Ball Association.
....	1	....	1	
3	3	6	....	
....	....	....	....	
....	....	....	....	
....	....	....	....	
....	....	....	....	
....	....	....	....	
....	....	....	....	
....	....	....	....	
18	11	14	15	The colleges represented in athletic contests with Harvard in 1882–'83 were Amherst, Bowdoin, Brown, Dartmouth, Columbia, Haverford, McGill University (of Montreal), Massachusetts Institute of Technology, University of New York, Princeton, Trinity, Wesleyan University, Williams, and Yale. The boat club pays an annual rental of $800 for the boat-house, which belongs to the university.
....	3	3	....	
7	2	8	1	
2	3	3	2	
3	1	....	....	
....	....	....	....	
....	....	....	....	
....	4	....	3 and 1 draw	
....	....	....	....	
....	....	....	....	
18	7	16	9	Princeton's contestants were chiefly drawn from the following named institutions: Amherst, Brown, Columbia, Cornell, Harvard, University of New York, University of Pennsylvania, Rutgers, and Yale. The athletic association pays a nominal rent for its grounds, which include in ten acres, a foot-ball field, a base-ball field, a quarter-mile running track, five dressing rooms, and two grand stands.
....	5	2	3	
4	5	8	1	
3	4	4	3	
3	1	....	....	

---

d Small house at New London.

e By theatricals for the club.

List of student organizations for athletic sports, in 1881–'83—	Year it was established.	Number of members in 1882–'83.	Nature and val property owne them or for the	Cost of maintenance in 1882–'83.	Funds raised among students.
At Amherst College, Mass., with 352 students.					
Base-ball club					
Foot-ball team					
Athletic association					
Bicycle club					
Tennis club					
At Bowdoin College, Brunswick, Me., with 215 students.					
Boating association	1871	73	Boat-house, $875; boats, &c., $800.	$50 00	$70 00
Base-ball association	1868	57	Uniforms, $150	430 00	211 00
Athletic association	1874	98		30 00	
Tennis association	1883	50	8 tennis courts, $175		30 00
At University of California, Berkeley, Cal., with 143 male students.					
U. C. Base-Ball Club		9			
U. C. Foot-Ball Club	1882	15			
At Columbia College, New York City, with 1,522 students.					
Boat club			Rents a $6,000 boat-house	4,500 00	
Foot-ball association					
Athletic association	1873	95		400 00	400 00
Bicycle club	1880	30			
Cricket club		33			
Tennis club	1883	20			
At Dartmouth College, Hanover, N. H., with 329 students.					
Base-ball association	1860	339	Uniforms, &c., $250	832 75	755 25
Foot-ball association	1881	339	Uniforms, &c., $150	175 50	175 50
Athletic association	1875	339			
At Rutgers College, New Brunswick, N. J., with 129 students.					
Boating association	1871	31	Boat-house, $1,500; carried away by freshet of 1882.		
Base-ball association					
Foot-ball association					
Tennis association					
At Wesleyan University, Middletown, Conn., with 176 male students.					
Foot-ball association	1881		Uniforms, &c., $130	261 30	219 50
Rowing association		60	Boats, &c., $1,000; boat-house rented for $150.	805 68	360 00

Columbia, Dartmouth, Rutgers, University of California, and Wesleyan University.

Funds raised among outsiders.	Times represented in contests, in 1882-'83, in town.	Times represented in contests, in 1882-'83, out of town.	Number of contests won by them.	Number of contests lost by them.	Remarks.
....	7	8	6	9	Athletics are encouraged. Some members of the Faculty make money contributions. Men in teams are excused from certain exercises in the gymnasium. Professional trainers are occasionally employed.
....	....	....	....	....	
....	....	....	....	....	
....	....	....	....	....	
....	....	....	....	....	
....	1	....	....	....	Bicycling and foot ball are also engaged in. Members of teams are excused from certain recitations.
$219 00	5	3	4	4	
30 00	1	....	....	....	
....	2	1	2	1	
....	....	5	4	1	Class nines cost $20 for maintenance, and class foot-ball teams, $25.
....	4	....	4	....	
....	6	6	6	6	
....	3	7	1	9	
....	20	....	5	15	
....	....	....	....	....	
....	....	2	(a)	....	
....	....	....	....	....	
77 50	7	5	9	3	There were also tennis, bicycle, and hare-and-hounds clubs established in 1881. The nine has leave of absence for about a week yearly.
....	1	1	1	1	
....	....	....	....	....	
....	....	....	....	....	The authorities do not interfere with athletics, except that each man on the "'varsity nine and eleven is required to file a certificate to the effect that his parent or guardian is willing for him to play."
....	12	8	11	9	
....	7	3	6	4	
....	....	....	....	....	
98 00	1	3	3	1	Crews and teams have been excused from college exercises, to some extent, for inter-collegiate matches. The crew has sometimes employed a professional trainer. A gymnastic exhibition has usually been given during commencement week. The authorities have not provided for any systematic instruction or drill in gymnastics or athletics.
350 00	1	1	....	1	

a Drawn games.

CONCERNING PLAY GROUNDS.

GENERAL FACILITIES.

At most country colleges ample facilities in the way of grounds are furnished for the playing of base ball, foot ball, and tennis. The playing fields are usually within the college precincts. Since track athletics, *i. e.*, walking, jumping, sprint and hurdle races, have become popular, very considerable sums have been spent on the grading and on the improvement of athletic fields, in the way of providing stands for spectators, dressing rooms for the contestants, and "cinder tracks" for pedestrian purposes. Haverford College has a fine cricket field; Lehigh University has an inclosure containing a grand stand, dressing rooms, and a quarter-mile cinder path, together with fields for ball and lawn tennis; the University of Pennsylvania, in Philadelphia, has recently furnished a well-appointed athletic field; and the Johns Hopkins University, in Baltimore, has one nearly completed.

HARVARD'S PLAYING FIELDS.

The grounds devoted to field sports at Harvard belong to the university, and are well known among collegians as Holmes Field and Jarvis Field. They are adjacent to the Hemenway Gymnasium, and together embrace not far from ten acres of level land. Holmes Field was put in order in 1883-'84 at an expense of nearly $6,000, toward which the university contributed $2,000, the remainder being raised by subscription. The following statement, printed in the Harvard *Advocate*, January 4, 1884, is given for the purpose of affording information to institutions that may hereafter find it necessary to improve their play grounds:

RECEIPTS.

From subscriptions	$3,814 00
From Harvard University	2,000 00
	5,814 00

EXPENDITURES.

For grading field, and making and furnishing material for track, etc., as specified in agreement of July, 1883	$4,541 00
For 6 M. feet kyanized spruce, at $23	138 00
For grass seed	152 50
For manure	195 00
For teaming lumber	14 00
For watering track	4 00
For spreading and spading manure	112 50
For carpentering and other work	14 00
For sawing spruce stakes	4 00
For 52 loads of coal ashes, at 10 cents	5 20
For use of horses and carts	96 50
Carried forward	5,276 70

Brought forward	$5,276 70
For services	106 75
For screening cinders, etc	100 00
For 146 loads ashes, at 15 cents	21 90
	5,505 35
Balance in bank	308 65
	5,814 00

To the balance in the bank must be added $180, which is due the athletic association from the sale of cinders and gravel, and some money from subscriptions, which has not as yet been deposited.

THE YALE ATHLETIC FIELD.

As showing what undergraduate zeal and alumni aid, when combined, can accomplish toward promoting athletic interests, the following condensed abstract of the report of the Yale Field Corporation is given:

For many years Yale men have known that their college was one of the few which made no provision whatever for the outdoor sports of its students. Though situated near the center of a rapidly growing city, it relied entirely on such arrangements as its undergraduates could make from year to year.

In the spring of 1880 a movement was started in the Junior class which led to a university meeting, at which a committee of students was appointed to find out whether a suitable field for college sports could be purchased, and, if so, whether it was probable that money could be raised to pay for it. The committee reported favorably on both points, and was authorized to take the necessary steps to secure a field. Two months later this committee associated with itself the "Advisory Committee on Athletics," then composed of four graduates. During the following year the sum of $15,000 was collected and twenty-nine acres of land were purchased.

On the 27th of May, 1882, the "Committee on Purchase of Yale Athletic Grounds" was merged in the "Yale Field Corporation," which was formed to "manage grounds to be used by persons connected, or who shall have been connected, with Yale College, for athletic games, exercises, and recreations in said college, and to take, buy, own, and hold property, real and personal, necessary or proper therefor."

The members of this corporation are all persons who prior to its incorporation had paid $5 to the treasurer of the field fund, and all students and instructors who since that time have paid a like sum to the treasurer of the corporation. The management is vested in a board of twelve directors, of whom four are undergraduate officers of college athletic associations, six are graduates, and two are instructors in the university.

On the 1st of June, 1884, the field was thrown open to the college, and during the fall it has been used for foot ball and lacrosse, and has given general satisfaction. It lies on the south side of Derby avenue, due west of the campus, and distant one and one-half miles.

Some have objected to this field on account of its distance from the college. The reason why it was selected was because there was no suitable field nearer which could be bought. Every available spot within two miles of the college was carefully examined and considered, and those who know what there was to choose from have never questioned the wisdom of the choice. In point of fact, the new field is one sixth of a mile nearer South College than the grounds heretofore used, and the directors think that the Chapel street cars will soon run to the entrance. The location adopted, moreover, is in less danger from the opening of new streets than any other site available.

The preparation of the field for use has gone forward rather slowly. The reasons are numerous. It has been hard to raise money, and the expenses have been heavy.

Many questions have arisen concerning the treatment of soil, raising of turf, building of the track, etc., about which it was extremely difficult to procure trustworthy advice, and to proceed without it was simple experiment. The *personnel* of the committee and board of directors has undergone many changes. The members were from different cities, and those who are graduates have been so closely occupied with their own affairs that the time required for this work has not been easily spared.

Soon after the land was purchased the fences, trees, and buildings were cleared away, and about fourteen acres were graded for use. The soil was then enriched by plowing in two crops of grass and the addition of large quantities of wood ashes with other fertilizers; and by seeding and sodding, a strong turf was secured over an area about equal to that of the New Haven Green. The plan for lay-out submitted by Mr. Frederick Law Olmsted was adopted, with some modifications suggested by those practically acquainted with college athletics. At the entrance a roadway 200 feet long by 30 feet wide, flanked by a stone wall, was constructed, and drives four-fifths of a mile in length have been laid out within the grounds. The running track lies at the south-east corner of the field, and was built under the superintendence of Mr. Robert Rogers. It is a quarter of a mile long, and the straight-away length of its sides is 372.5 feet, while the width is 15 feet in the narrowest and 20 feet in the widest part. No pains were spared in its construction or in procuring the right kind of cinders and other materials of which it is made. The grounds are inclosed on three sides by 2,762 feet of fence, the fourth side being bounded by the river. The water supply is furnished by a good well and by 1,580 feet of pipe, which extend through the grounds from the city main. The grand stand, situated at the north side of the field and overlooking the principal ball ground, is the gift of Mr. William H. Crocker, '82 S. It seats 850 persons, and will afford a perfect view of the intercollegiate games to be played directly in front of it. The field is now ready for base ball, foot ball, track athletics, lacrosse, and tennis, and a tract of about four acres has been set aside for cricket, though it is not yet graded. When completed it will afford room and opportunity to all students for all games which they wish to play.

The plans adopted for further improvement include the grading of the cricket field, the planting of a hedge just inside the fence, the erection of two club houses, containing baths and dressing rooms for those who take part in the games, and some minor matters which will add to the beauty and convenience of the grounds.

The field lies on the farther bank of West River, on a bluff that rises forty feet above the water and extends westward. The side and eastern edge of this bluff are covered by a growth of chestnut, oak, and hickory, and near the entrance gate are two large pines. Through the grove one sees the city, and toward the south catches glimpses of the harbor and sound. The Edgewood hills rise on the side opposite the river, and West, Pine, and East Rocks, and farther away Mount Carmel, may be seen to the northward and north-east. With these natural advantages the field can be made a pleasant place for all friends of the college to visit. * * *

The following financial statement is submitted by the treasurer:

RECEIPTS.

Subscriptions paid	$32,209 35
Amount borrowed	20,685 78
Proceeds of buildings sold, rents, etc	289 12
	53,184 25

DISBURSEMENTS.

For land	$21,394 50
For track	3,330 02
For grand stand	6,658 67
Carried forward	31,383 19

Brought forward		$31,383 19
For grading and preparation of field		13,558 41
For interest and discount		1,908 62
For expense account:		
Superintendence	$1,893 62	
Collection expenses, travel, etc.	2,299 66	
Fence	907 12	
Water pipes	673 88	
Seed	559 75	
		6,334 03
		53,184 25

The above statement shows that the corporation is in debt $20,685.78. It was thought best to borrow money to prepare the field for use rather than delay the work longer. The estimated expense of grading the remainder of the ground, erecting cottages, planting a hedge, and carrying out the rest of the plan already adopted, is, in round numbers, $10,000. At least $30,000 is therefore needed at once.

It is estimated that the cost of employing a superintendent and keeping the field in order after it is finished will be fully met by the money received for admission to the games. When the students use their own field the expenses of maintaining athletics can be materially reduced.

Any persons disposed to aid the corporation in meeting its obligations and continuing the work are earnestly requested to communicate with the treasurer, Mr. Henry B. Sargent, New Haven, Conn.

By order of the board of directors.

MASON YOUNG, *President.*
HENRY C. WHITE, *Secretary.*

NEW HAVEN, *Conn., December* 20, 1884.

During 1883–'84, Mr. W. C. Camp, who had distinguished himself as an accomplished athlete and as a scholar during his course at Yale, was engaged by the graduate advisory committee on athletics and the athletic association of the undergraduates to supervise the field sports of Yale students, at a salary of $1,200. Mr. Camp's assiduous and intelligent coaching and training contributed much to Yale's athletic triumphs in 1883–'84, when the Yale crew, foot-ball team, and ball nine each gained the championship prizes of the year.

THE YALE SYSTEM OF ATHLETICS.

Physical training at Yale means athletics, toward the regulation of which the Faculty exercise a minimum of influence. It is rather singular that Yale, which has been so averse to anything approaching an elective system of studies, should have developed a most unrestricted elective system of athletics.

The fairest and most intelligent paper elicited by the recent discussion of athleticism which has come under our notice, is the production of an ardent friend and defender of the Yale system of athletics. In it the whole system is so well set forth, its advantages are so cogently argued, and the attacks of its critics so temperately met, that it seems best to quote copiously from it. Its exposition of the reciprocal relations of body-work and brain-work should be *grasped* by every teacher.

Those who may desire to consult the paper as originally printed will find it published, in two parts, in the *Popular Science Monthly* for February and March, 1884.[1]

I. ADVANTAGES.

* * * If we can show that college athletics supply this need [of exercise] to quite a large body of students, and supply it regularly and systematically, we may secure a patient consideration of their good effects long enough to add a discussion of their accompanying evils. In this discussion we hope to prove that the evils have been exaggerated; that they are not so great as would be the evils of a college life without a system of athletics; and, lastly, that such evils as do inhere in the present system are capable of remedy.

* * * Though we admit the truth of all the wise sayings with regard to a "sane mind in a sound body," we are yet too apt to regard the sound body as a mere accident of inheritance or environment. So we read the proposition as a hypothetical one, viz., "If the body is sound the mind will be sane." Few but physicians read it as indicating a connection between body and mind, by means of which we can make, or help to make, a good healthy brain by making a good sound body. In the fact that the brain always seems to direct the body, we are prone to forget that the body carries the brain and feeds it with its own life. If the body has good blood the brain will have good blood also. If the body does not furnish good material, the brain will do, according to its capacity, poor work, or will not work at all. * * *

There are two kinds of brain-work,—one which we may very properly call body brain-work, and the other mind brain-work. Most people, including a great many educators of youth, consider mind brain-work to be the only kind of brain-work. But body brain-work is quite as essential to the healthy existence of the brain, and really comes first in the order of brain growth. The child, too young to know anything except its bodily wants, and conscious of them only when the denial of them causes pain, develops brain every time it makes a will-directed effort to grasp the thing it wants. The movement of its hand is as necessary to the development of its brain as the guidance and government of the brain are to the growth of the hand. What is true of the hand is true of the other bodily organs whose motion is under the control of the will. They and the brain are developed by reciprocal action. Interfere with this body brain-work in childhood, or at any period of growth, either by repressing it or by diverting from it too much vital energy to mind brain-work, such as is involved in the acquisition of knowledge, and you not only stunt the body, but also enfeeble the brain, by depriving both of their proper growth. * * *

Care to guard against this interference is all the more necessary in cases in which the brain is large or sensitive. Now, will any man say that at the time of life when young men come to our American colleges, when, in fact, all their bodily organs are approaching maturity, this body brain-work ought to cease, or can, without danger, be neglected? Is it not most essential that at this very period the reciprocal action between body and brain should be steadily maintained, in order that both should be able to endure the strain put upon them by the various stimulants of thought and feeling to be found in college life? The great pressure brought to bear upon them is toward conscious cerebration. Acquisitions of knowledge, scholarships, the ambitious desires of parents, and prizes, all incite them to neglect body brain-work, under the mistaken impression that time given to that is time lost to the other. Many a fine scholar has left college with great honors to experience in his subsequent career the serious results of the mistake made in college, and has discovered, often too late, that a vigorous body to carry his brain is more essential to success in life than a well-trained brain full of knowledge but lacking a strong body from which to draw its nourishment and strength.

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[1] *College Athletics*, by Eugene L. Richards, Assistant Professor of Mathematics in Yale College.

Again, exercise, to be beneficial, should be regular and systematic. To be most beneficial it should be in the open air. The oxygenation of the blood is not the least important effect of exercise. In consequence of the reciprocal action of mind and body, to be as beneficial as possible it should be accompanied by mental occupation. The mind should be interested in the exercise while the body is engaged. How shall all these requisites of the best kind of exercise be secured? First, a regularly set *time* for exercise; next, a fixed *amount* of time devoted to it; then, a *place* where the lungs should breathe fresh air; and, lastly, a *kind* of exercise which should engage the mind as well as the body. By the present system of college athletics these requisites are met, if not perfectly, at least as well as it is possible for them to be met. * * * They do furnish a mental stimulus. They set up an object to be striven for, and an ideal of strength or skill. The object is honor—honor of no great worth, perhaps, but still honor, to the student-mind. In boating, the object is a victory over a crew of a rival class or a rival college. In lacrosse, base ball, and foot ball, besides working for the ultimate object of the championship, the mind of the player has continual occupation in the game itself. To secure a victory in any of these sports, good brains in the players contribute quite as much as good muscles. In fact, it is the skilled muscles rightly directed by good brains which win, and not the players most skilled in the use of their muscles. Mind as well as body has to be considered by the successful captains in the selection of their men. Then there are minor considerations which keep students in steady training, and help to induce more men to work than finally appear in the great contests, such, for instance, as the ambition to secure an office or position in one of the university organizations, and thus an honorable standing as a college man. * * *

The following brief account of the exercise taken by the students is offered in order to insure a better understanding of the system of college athletics:

Almost as soon as the college opens in the fall, the various class nines begin their games for the college championship. At the same time the class crews, the foot-ball and lacrosse teams, put their men into training. This means regular exercise in the open air from four to six weeks for about 140 men. Quite as many more are benefited, some by actual participation in the games, in order to furnish opponents to the teams in practice, and others by training for the athletic association contests. After the class base-ball championship is decided, and the athletic association meetings have terminated, fewer men exercise. The interest of the college then centers in the foot-ball elevens, one selected from the whole university, and the other from the Freshman classes of the academic and scientific departments. To give these teams practice, all the college is urged to go to the field and play against them; and though, of course, the invitation is not accepted as extensively as it is given, yet it does induce quite a large number of men to exercise. But this is not the only good effect of the existence of these teams. Catching the enthusiasm of the sport, often the men of different dormitories and of different eating-clubs send out teams for matches. The foot-ball season terminates at the Thanksgiving recess. The two or three weeks intervening between this recess and the winter examinations see very little exercise taken by the students, except by the few who regularly use the gymnasium. Immediately on the opening of the winter term activity in athletics manifests itself again. The captain of the university crew, the captain of the university base-ball nine, the captains of the different class crews, and the captain of the Freshman base-ball nine, call for men who wish to try for positions on these organizations. The candidates are put into regular training in the gymnasium while the season prevents exercise out of doors. Nearly a hundred men come forward, who are actually in training for at least one hour a day. They are required to live rightly in all respects. Each man is bound to avoid excesses of all kinds. The force of a public opinion created by the sight of these men attending to their physical development, and living according to laws and rules, acts upon the college world to encourage regularity of life and obedience to authority. It is a moral power in the community. As soon as the season permits, the men are sent out of doors. The crews take their seats in the boats. The nines take their positions in the field. The spring regatta terminates the practice of the class crews, but, as that event occurs about three weeks before the June examinations, and five weeks before the close of the college year, it does not leave the young men a long time without exercise. The university, consolidated, and Freshman nines, the lacrosse team, and the university crew (with sometimes a second eight), continue their practice much longer, some of them stopping work only after the close of the college year.

Now, it may be said that the writer has only shown that regular exercise has been secured during a few weeks of the first term to 140 men at the most, and during the whole winter term to 100 men; and in the spring and summer to 109 men part of the term, and to half that number during the whole of the term. Granted. But there are other organizations which induce men to exercise. The athletic association has already been mentioned. This gives three exhibitions: one during the winter or early spring in the gymnasium, and two in the open air, one in the summer and one in the fall. The Dunham Rowing Club has a membership of 44 men. Then there are canoe clubs, tennis clubs, and gun clubs. It would be putting the estimate too low to say that at least half of the undergraduate members of the academic and scientific departments get quite a regular amount of systematic out-door exercise from, or in consequence of, the present system of college athletics. This activity, too, has been mainly the outgrowth of the attention given to boating and to base ball. They had the first regular organizations, and the others have taken pattern from them. It is no argument against the system that all the members of the university do not take advantage of it. The need of exercise is met, and opportunities for regular and systematic exercise are given, with inducements to take it, which do act upon at least half of the membership of the two departments most in need of it. The system might do more good if time were set apart by the various Faculties for the purpose of encouraging exercise, but in considering the system it must be borne in mind that it has grown up in a continual struggle for existence; and, until within a few years, without either help from graduates or favor from the college authorities.

* * * In addition to those already mentioned, we claim for it the following advantages:

(1) The college is sending out a better breed of men. College athletics send their healthy influence into the schools, and in them consequently increased attention is given to physical development. Thus the material coming from the schools is improved. In college this material is better preserved and better developed under the present system of athletics. More well-trained minds in more healthy bodies are graduated from college than in former years. What President Eliot says on this subject is as applicable to Yale as to Harvard:

> It is agreed on all hands that the increased attention given to physical exercise and athletic sports within the past twenty-five years has been, on the whole, of great advantage to the university; that the average physique of the mass of students has been sensibly improved, the discipline of the college been made easier and more effective, the work of many zealous students been done with greater safety, and the ideal student been transformed from a stooping, weak, and sickly youth, into one well-formed, robust, and healthy.

(2) The system of college athletics gives opportunity for the development of certain qualities of mind and character not all provided for in the college curriculum, but qualities nevertheless quite as essential to true success in life as the scholarship or literary culture. Courage, resolution, and perseverance are required in all the men who excel in athletic sports. The faculty of [illegible] organization, [illegible] executive power, the qualities which enable men to control and [illegible] men, and again, those other qualities by which men yield [illegible] just authority, are all called into action in every boat race, in [illegible] in all the gen-

liminary training. In athletics the college world is a little republic of young men, with authority for government delegated to presidents, captains, and commodores, and loyally supported by the resources and bodies of the governed. Is the system not worth something as a means of preparation for the responsibilities of life in the larger republic outside the campus?

(3) The system is conducive to the good order of the college. It conduces to good order in furnishing occupation for the physically active. There are men in every class who seem to require some outlet for their superabundant animal life. Before the day of athletics, such men supplied the class bullies in fights between town and gown, and were busy at night in gate-stealing and in other pranks now gone out of fashion. * * * Any instructor who has kept track of the ways of college during the past fifteen years cannot fail to be struck by the decreasing number of the really great disorders, by the mildness of those which remain, and by the increasing regard on the part of the students for college authority, college property, and for the rights of fellow-students.

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Again, the system conduces to good order in its effects upon class-feeling. It acts upon this class-feeling in two ways: first, in the contests between class organizations, furnishing a safety-valve for it; and second, in the university organizations, tending to moderate it. * * * Since these organizations are composed of men of all classes, it is impossible for a college to be enthusiastic for its crew, team, or nine, without a common sympathy binding all the classes together. Moreover, it is observable that the time of the year when the athletic contests are not absorbing the attention of the college is the very time when the disorders between classes and the persecutions of Freshmen are most prevalent. * * * Formerly it was the strong men who incited and took the chief part in disorders. Now all their interests and all their efforts are against them.

(4) The system furnishes to instructors an opportunity of meeting their pupils as men interested in a common good, without the chilling reserve of the recitation room. * * * The college officer who gives a little of his time even to the boys' play soon finds his sympathies widen, and, by learning from actual observation how young men feel and think, becomes able to deal more wisely with those under his charge, from a fuller knowledge of them.

(5) The power of the athletic contests to awaken enthusiasm ought not to be held of small account. The tendency of academic life is toward dry intellectualism. * * * It is not too much to say that in many a student, while passing from Freshman to the end of Senior year, this spirit would die for lack of culture were it not for athletics. There is training for it in every contest witnessed. * * *

(6) The system of athletics, by its intercollegiate contests, brings the students into a wider world. They are no longer "home-keeping youths" with "homely wits." They measure themselves by other standards than those they find in the limits of their own campus.

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II. EVILS AND THEIR REMEDIES.

* * * That the present system has evils is no valid argument against it, unless it can be shown either that these outweigh the good, or that some other practical system can be devised which shall have all the good with less of the evil of the present system.

(1) One evil alleged against the present system is the excessive amount of time required for exercise under it. It is no doubt true that some students do give too much time to athletics. Some students also give too much time to study; yet that fact is not brought forward as a fatal argument against the college course of study. Of the two excesses—excess of study and excess of exercise—the dangerous pressure at present is toward excess of study. But, in point of fact, this evil of too much time given

to athletics has been greatly exaggerated. The winter term is not open to the charge of excessive athletics. The athletes then training do not devote an average of more than an hour a day to exercise. Perhaps a few give an hour and a half. It would be safe to say that, counting all the time consumed, including the time of exercise, the time used in going to and from the gymnasium, and the time used in dressing and undressing, it would not go beyond two hours per day, and in most cases would be less than that amount. So, to consider the question of excessive time, we must look at the fall and spring terms. In the fall, during days when afternoon recitations are held, the class nines do not spend more than two hours' time all together, including both practice in the field and the time of going to and from practice. The same may be said of the foot-ball and lacrosse teams. On Wednesday and Saturday afternoons the students give from two to three hours to practice. On these afternoons the match games occur. They are prohibited on other days, except during examinations, at which time they are allowed on any day, provided no player is thereby prevented from attending his examination. The crews, also, in practice on the water and in going to and from their boats, spend two hours daily. On Wednesdays and Saturdays they use more time, but the practice is so arranged as not to interfere with recitations.

In the summer the same amount of time daily is given to practice, except that when recitations cease and examinations begin the university and Freshman nines use more time. Even then that time will not average more than three hours per day. When match games are played out of town, to the time of the game must be added the time used in travel to and from the scene of the match. In the season of 1882, of the games played during the time when recitations or examinations were being held, only five were played out of town by the Yale University nine, though the men went out of town once or twice more but were prevented from playing by the rain. Of these five, three were played in New York City, which is only a little over two hours' ride from New Haven. Of the remaining two, neither needed more than thirty-six hours' absence from town.

The university crew row only one race a year. The foot-ball elevens and the lacrosse team play a few games out of New Haven, but do not use in this way as much time as the nine.

(2) It is said that the excitement attendant on these sports distracts from study. It is true that the contests do furnish excitement for the students, but it is excitement of a healthy kind. * * * Banish athletics, and you increase the attendance at the theaters and the saloons, where the temptations are greater, and the excitements less healthy, than those of the ball field and boat race.

(3) There is the evil of betting. This is not an evil peculiar to athletics. * * * Games and races in colleges do not create betting. They simply divert it from other channels.

(4) Then there are the disorders consequent upon victories. These disorders are sometimes quite serious, but are by no means so serious as they are often represented to be. On the campus such disorders have never been more serious than some disorders taking place after the conferring of degrees. They have always been easily controlled. * * *

It may be replied that disorders consequent upon victories are not confined to the college campus. Indeed, to the minds of many candid men, the great disorders which bring dangerous disgrace to the present system of college athletics, and reflect upon college government as well, occur at the intercollegiate contests, when the athletes meet on neutral ground. * * * For this evil a more general interest in the subject on the part of instructors and parents, and their more general attendance at the games, would easily suggest the remedies of a healthy and manifested public opinion, and a judicious personal influence.

(5) It is charged against athletics that they benefit the few, and that these few are those least requiring the exercise. One part of the charge can be appreciated—that few are benefited—these few being the members of the crew, nine, eleven, and la-

crosse teams of the university. These, with substitutes, amount to about fifty men. But it has been already shown that more men are induced to exercise than the actual membership of these organizations; and that the present system affects, in the matter of exercise, at least half of the undergraduate department.

The objection that the men under training in the university organizations are the men least requiring the training can be understood to be one of two propositions, viz., either that these men have naturally so much power or skill that they need not develop any more, or that they will cultivate their strength and nerve without being stimulated to do so by the workings of the present system. This would be like arguing that men of great mental gifts either do not need an education, or would get an education without any opportunities being provided for this purpose in a school or college system—a proposition which, however true in exceptional cases, taken as a general statement no argument is required to prove absurd. * * *

(6) It is said, again, that the system may develop men, but it only makes fine brutes of them, and sets before the college a false standard of excellence, viz., one entirely physical. It cannot be said with truth that the standard is false. * * * Other things being equal, the bright mind and good heart in a strong body are better than the same things in a weak body, because they can accomplish more in life.

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(7) The evil of a general nature last to be considered is that of expense.

The expenses of the organizations which have special university representatives are only taken into account, since these are the organizations of which the evils have been so loudly proclaimed to the public. In the table given below (for Yale College) the "expenses" and "income" are the totals for both university and class clubs combined. For base ball, foot ball, and lacrosse, the amounts in the column headed "earned" are made up for the most part of gate-money taken at exhibition games. For the boat clubs, of the amount put in the same column, $1,045.36 was the net result of a dramatic entertainment given by the students for the benefit of the university club. The balance was obtained from entrance and carriage fees at regattas, renting of lockers, and sale of boat.

Clubs.	Expenses.	Income.			
		Total.	Balance from 1881.	Earned.	Subscribed.
Boat	$7,348 86	$7,426 52	$177 54	$1,322 11	$5,926 87
Base ball	6,863 38	7,254 15	....	5,457 15	1,797 00
Foot ball	2,689 80	2,792 36	1,080 71	1,329 65	382 00
Lacrosse	574 00	575 00	....	225 05	349 05
Total	17,476 04	18,048 03	1,258 25	8,333 96	8,455 82

It will be observed that the total amount subscribed is less than half the expenses. Two hundred and ninety dollars of this sum were given by graduates. Deducting this, and considering that, according to the catalogue of 1881–'82, there were, in the undergraduate, academical, and scientific departments, seven hundred and eighty-six students, the cost (above earnings) of the present system averages only a little over $10 per man. As all departments are benefited by the system, the average ought to be taken for the whole university. There being in the university over one thousand men, the average cost per man would be considerably less than $10. It will be said that part of the earnings come from the students, since they are the chief attendants at the game. This is true. Assuming that half the earnings come from the students (an amount probably in excess of the real amount), the average cost per man for the university will not be far from $12. Fifteen dollars per man would undoubtedly cover the whole cost of athletics throughout the year, counting not only the athletics represented in the table, but all other kinds as well. Certainly this does not seem an extravagant sum to pay for the benefits derived from the system. The writer believes that the expenses can be very much diminished. The tendency to unnecessary increase of expenses can certainly be diminished by measures hereafter noticed.

By the table, it will be seen that the subscriptions for base ball and foot ball were small in amount, as compared with their earnings. It is generally believed, among students, that the university organizations of both these sports can be made self-supporting.

The evils already commented on are general. There are other so-called evils which are special—some peculiar to one kind of athletics, but not belonging to the others. One of these, charged against base ball, is that the game brings the students into contact with "professionals." Whatever may be the extent of the evil in other colleges, at Yale it has not proved to be so great as to call for faculty interference, or even to excite apprehension. All the evils, real or imaginary, connected with ball-playing, are reduced to a minimum when the students meet "professionals." They meet them simply for practice. Betting is, as a rule, precluded by the fact that the result is generally a foregone conclusion, and men bet on only doubtful issues. Off the field there is no more intercourse between the students and the "professionals" than is necessary to transact the business attending the match. The professional nine are then generally represented by their business manager, and the students by the president or treasurer of their club. In the game one nine is in the field, while the members of the other are at the bases, or waiting for their turn at the bat. The "professionals" are under the strictest discipline, so that their presence does not invite or occasion dissipation in any form. Victories of college nines over "professionals" are not frequent, and are not attended by disorders on the campus.

But to some objectors the evils of "professionalism" in athletics includes more than playing with professional nines. The employment of professional "trainers" in preparing students for contests is, for some, the chief evil. Such trainers are looked upon as bad companions for our young men. It is contended that they undermine the morals of our students by their profanity and generally low talk. They are also supposed to give too high a standard of excellence for our amateur athletes, and thus to draw on too much of their time and strength in the effort to make them conform to this standard. All these things may happen in some cases, but they do not happen frequently.

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An easy cure for possible evils in this direction would be for the Faculty of each college troubled by vicious trainers to forbid their students employing such men. An investigation, however, into the relations between such trainers and their pupils would show that the pupils despise the lowness of the men quite as much as do the Faculty themselves. Another and better remedy would be to select an amateur athlete from the graduates, educated as a physician, and give him a salaried office, with duties as general adviser and guardian of the athletic interests. Such a man, if properly qualified, would help the students to a safer and better physical development than they now get, and would, besides, soon drive away all trainers exercising improper influences among them.

* * * * * * *

What the condition of the college would be without a system of athletics is a question already partly answered by what has been said in meeting the charges against the system. We can understand, also, the effect of abolishing the present system by calling to mind the disorders reported in colleges in which no such system is allowed to exist. The revolts against authority and the great disorders between classes now occur with the most frequency, not at colleges which have the greatest number of students and the most extensive athletic organizations, but at the colleges in which the students either are not able or are not allowed to establish such organizations. The disorders which used to occur in New Haven thirty or even twenty-five years ago ought to convince any candid man that, however great the present evils of college life are *with* athletics, the past evils *without* athletics were worse.

* * * * * * *

As to those evils which are capable of remedy, and of which the remedy has not been before expressed or implied, we will take up that of unnecessary expense. It has been before shown that the expense of the system is not enormous, considering the good done. But undoubtedly it is greater than it need be. Moreover, it will naturally tend to increase. * * * Each officer, as a rule, serves but a year, when he makes room for a new officer, who is as inexperienced as his predecessor. The experience gained each year might be made serviceable by associating with the incoming treasurer a permanent graduate treasurer. The vice-president might be elected to become president as soon as the year's service of the president expired, so that he would serve as vice-president one year and one year as president, his service thus extending over two years. * * * Besides the changes suggested, a general auditing committee for all the interests should be formed, consisting of graduates and undergraduates. * * * A committee of both graduates and underdergraduates could audit the accounts, and would be able to make suggestions which would be sure of a hearing. By such changes in the system and the economies which ought to result from them, field sports, such as base ball, foot ball, and lacrosse, should be self-supporting. The income derived from gate-money should meet the expenses.

Since some very worthy people who believe in manly sports object to young men playing for money taken at the exhibition games, it is necessary to say a word of explanation with regard to this feature of all ball-games. If field athletics are to continue, the expense of them must be met in one of two ways, either by gate-money or by subscription. * * * It seems only just that, if the public desire to see a good game, they should pay for the exhibition. The men work hard in practice, and are entitled to have their expenses paid. More than that they do not ask. They do not play for gain, but for honor. By their rules, they do not allow any man to be a member of their organizations who has earned money as a professional.

The evil of liability to strains and injuries in athletics cannot be entirely obviated. * * * Yet, so far, according to the recollection of the writer, no regular member of a Yale crew, team, or nine, has been permanently injured by participating in a race or match. Still, it is possible that a slight injury, to a person having organic weakness, might result in a fatal difficulty. Such an issue might be avoided by the requirement that every candidate for trial should be examined by a competent physician, and, in default of procuring a certificate of physical soundness, should be excluded from participation in athletic contests. Besides this, every candidate for a place in a crew should be debarred from entering a race unless he had mastered the art of swimming.

If, moreover, the Faculty of every college having a system of athletics would exert a sympathetic as well as a judicious oversight of the students interested in the system, they would find the young men quite willing to listen to friendly suggestions. If, also, the times of recitation were so arranged that a proper amount of time could be devoted to exercise without interference with study, more brain-work, and of better quality, would be secured than by the policy prevailing in some colleges, according to which, not only no encouragement is given to athletic sports, but, on the contrary, every obstacle is thrown in their way.

The college which neglects or ignores physical culture may send out scholars, but it will not educate forceful men. It will not be the living power which it might be. Truth is not to prevail by the dry light of intellect alone, but through the agency of good, wise, and strong men.

The Yale authorities, we are assured, "take no official notice" in regard to athletics, and exercise no interference, except the negative one of granting no privileges. Individually two or three members of the Faculty take great interest and show sympathy by attendance and personal encouragement.

PROFESSIONALISM AND INTERCOLLEGIATE CONTESTS.

DEMORALIZING INFLUENCE OF PROFESSIONALISM.

Professionalism has done much within the last five years to bring discredit upon college sports; and by professionalism we mean the purpose to win a game by any means, fair or foul. Professionals make a business of contending for money, either as stakes or prizes or gate receipts, having little or no regard to the benefits which should accrue from the exercise of bodily force or skill. The enhancement of health and manliness by vigorous recreative action is the primary aim of athletics. This is frequently lost sight of in the pursuit of athletic honors. Honors obtained at the cost of physical strains or one-sided development are dearly bought and injurious. Not a few are stimulated to unduly exhausting and violent exertions by their ill-judged desire to win. Athletic honors are sometimes—not generally, but more and more frequently in recent years—sought by collegians through the use of dishonorable means. The intercourse between college teams smacks too often of the manners of professional pugilists and of roughs. Expedients to disable or outwit antagonists have come to be looked on with too great a degree of allowance. Questionable means are sometimes employed to enable professionals or semi-professionals to play in college teams. When college men are willing to travel with professional ball players, and especially under assumed names, it is time for college authorities to recognize and regulate college athletics.

THE REGULATION OF ATHLETICS AT HARVARD.

At Harvard the Committee on Athletics is one of the standing committees of the Faculty. The following regulations, promulgated by this committee October 7, 1882, serve to exemplify in a measure the ideas of the Harvard authorities with regard to the matter:

(1) No college club or athletic association shall play or compete with professionals.

(2) No person shall assume the functions of trainer or instructor in athletics, upon the grounds or within the buildings of the college, without authority in writing from the committee.

(3) No student shall enter as a competitor in any athletic sport, or join any college athletic club as an active member, including base ball, foot ball, cricket, lacrosse, and rowing associations, without a previous examination by the director of the gymnasium, and his permission so to do.

(4) From the beginning of the college year 1883–'84 no person shall be admitted as a member of any class or university crew unless he knows how to swim.

(5) All match games outside of Cambridge shall be played upon Saturday, unless permission to play on other days is first obtained from the committee.

It should be noted that certain remedies proposed last March by Professor Richards for admitted or "possible" evils in college athletics, were embodied, in 1882, by the Harvard Faculty in the above quoted Regulations 2, 3, and 4. They have also adopted by anticipatory action, we believe, another of his suggested remedies, viz., the appointment of an auditing or advisory committee in relation to expenditures for athletic purposes.

By some of their impatient critics it has even been proposed to abolish intercollegiate contests. To attempt such extreme measures would be unwise, if not futile. Those who propose them fail to appreciate how strongly rooted an institution athletics have become; how great is their educational value when rightly managed; and how far sympathy, tact, and reasonableness are demanded in governing undergraduates. We must think, however, that the endeavors of the Harvard authorities to eliminate the aims and methods of professionals from college athletics were called for and timely.

THE INTERCOLLEGIATE ATHLETIC CONFERENCE OF 1884.

Early in February, 1884, an Intercollegiate Athletic Conference was held in New York City, at which delegates from the Faculties of the following named colleges were reported to be present: Williams, Amherst, Dartmouth, Tufts, Harvard, Columbia, Trinity, Wesleyan University, Stevens Institute, Hobart, Rutgers, Lafayette, Bowdoin, Princeton, Union, Cornell, Lehigh, Brown, University of Pennsylvania, University of Vermont, and College of the City of New York. Harvard took the lead in calling the conference. Yale was not represented at it. The following circular letter was issued by the conference:

REGULATIONS FOR INTERCOLLEGIATE ATHLETIC SPORTS.

FEBRUARY 7, 1884.

The object of physical training is to confirm health, correct morbid tendencies, strengthen weak parts, give a symmetrical muscular development, and secure as far as possible a condition of perfect physical vigor. In order to accomplish these desirable ends, young men are encouraged to take exercise and to enter into the general practice of athletic sports and games. If, however, the object of physical training be lost sight of, and the desire to win the championship or to attain the highest degree of excellence in these sports be made the *paramount* aim, then the practice of athletics is likely to be attended with evils that demand consideration. Some of these evils have already begun to make themselves manifest in the practice of college sports. With a view to correcting them, and of making athletic exercises an aid instead of a hindrance to the cause of education, the Intercollegiate Athletic Conference recommend the adoption of the following resolutions:

It is deemed advisable that physical training should form an essential part of a collegiate course; that the person selected to superintend this branch of education should be a man of character and ability, and that the dignity of his position should be recognized by giving him the moral support of the appointing power of the college. Therefore,

(1) *Resolved,* That every director or instructor in physical exercises or athletic sports must be appointed by the college authorities, and announced as such in the catalogue.

The object for which young men come to college is to get an education. If this object is to be secured, it is impossible for them to make a serious business of anything else. Ball playing, boating, etc., are engaged in by students as recreations, and students ought not to be expected to compete on equal terms with those who make the practice of these recreative sports the business of their lives. Students who compete or practice with professionals undoubtedly gain in experience and skill, but this renders it necessary that their college opponents should have a similar advantage or the terms would be unequal. This would lead to the general employment of professional service in every branch of competitive sport. But it is known that the character of professionals, as a whole, is not high; that their aim is to win at all costs; that they are often ready to sacrifice honor and self-respect, and even to jeopardize health, for mercenary motives. It is believed that the general employment of this class and the infusion of the professional spirit into college athletics would lead to their speedy decline. Therefore,

(2) *Resolved,* That no professional athlete, oarsman, or ball player, shall be employed either for instruction or for practice in preparation for any intercollegiate contest.

Much of the expense and loss of time attending the practice of college sports is occasioned by playing games at a distance; yet for various reasons it seems advisable that intercollegiate contests in these sports should be continued. They develop strength and executive ability, as well as courage, presence of mind, and other important elements of character. They give students an opportunity to measure their physical powers with others, and, when conducted in the right spirit, tend to make friends of rivals and to subordinate class feeling to college unity. For these reasons, these games ought to be more generally played in college. Class nines and foot-ball teams should be formed as well as class crews; and the university teams should depend more largely upon these organizations for practice. If the base-ball nines of one college practice with expert amateur clubs, because such clubs exist in their vicinity, this compels the nines of other colleges, not so favorably situated, to practice with inferior amateur organizations, regular professionals, or, what is more to be regretted, with undisciplined semi-professionals. Therefore,

(3) *Resolved,* That no college organization shall row, or play base ball, foot ball, lacrosse, or cricket, except with similar organizations from their own or other institutions of learning.

During the past few years several disagreeable controversies have arisen and much ill-feeling has been occasioned by the manner in which intercollegiate contests have been conducted. Much of the consequent dissatisfaction may be attributed to want of proper preliminary arrangements, over-zealousness on the part of some of the officials to see their own men win, a neglect to make rules and regulations to prevent unfair play, and a failure to provide a referee willing to enforce the regulations prescribed. Students in their conventions represent no one but themselves, and often act without responsibility and without authority, committing their fellow students to a questionable policy and establishing precedents which are detrimental to the interest of college sports. Therefore,

(4) *Resolved,* That there shall be a standing committee, composed of one member from the Faculty of each of the colleges adopting these regulations, whose duty it shall be to supervise all contests in which students of their respective colleges may engage, and approve all rules and regulations under which such contests may be held.

The students who are selected to take part in college athletics are men of fine physique, who, in order to keep themselves in excellent condition, do not need the amount of training which they get. Not infrequently these men have built up their bodies on farms and in workshops, and are paying their way through college by tutoring and other means. Time is of great importance to them; but their physical powers are in demand, and they are forcibly urged to join the "crew" or "nine," and work for victory and athletic honors. This double draft upon their energies sometimes costs them their degree, and obliges them to spend another year in college. Men have even been induced to enter the professional schools after graduation that they might help retain the championship in certain sports.

The evil of such a course is twofold: It tends to raise the standard of the sport beyond the capacity of the undergraduate, and thus limits the number that can participate in it. It makes hard work of what was intended for a recreation, and sometimes obliges a young man to make serious changes in his plan of life. Therefore,

(5) *Resolved*, That no student shall be allowed to take part in any intercollegiate contest as a member of any club, team, or crew, for more than four years.

The practice of playing match games in large cities for the sake of gate money has crept into college sports within the past few years. The evils which result from this practice are many. It leads to the introduction or retention of such features in the games as tend to draw large crowds, independently of the merit of the game and the spirit of fair play. It induces college men to put themselves in the hands of speculators, who manipulate and manage them as they would any traveling combination for the money to be made by it. It cultivates a passion for excitement in both players and speculators, which makes the ordinary field sports and gymnastic exercises seem tame and uninteresting, thus depriving the great majority of college students of a motive for physical exertion. Therefore,

(6) *Resolved*, That all intercollegiate games of base ball, foot ball, lacrosse, and cricket shall take place upon the home grounds of one or other of the competing colleges.

Nearly every intercollegiate boat race in this country has been won at the end of the third mile. The result has been a "procession" for the fourth mile, or a desperate attempt on the part of the defeated crew to retrieve themselves. The consequent tendency has been to lessen the interest in college boating, or to endanger the health of the participants from over-exertion and heart-strain. The training of class crews is generally for two miles. The style of rowing for a four-mile race is essentially different from that of a two-mile race, and requires different qualifications. The work of the class crew should be preparatory to that of the university crew. This is the goal for which most of the members of the class crews are struggling, and they should not be discouraged by having the difference in style and requirements too marked at the outset. Therefore,

(7) *Resolved*, That no intercollegiate boat race shall be for a longer distance than three miles.

As long as intercollegiate contests are continued, the conditions under which the students of the different colleges compete should be as nearly equal as possible. It is manifest that the conditions could not be equal should any college which adopts these resolutions play with any college which does not adopt them. Therefore;

(8) *Resolved*, That the students of colleges in which these resolutions are in force shall not be allowed to engage in games or contests with the students of colleges in which they are not in force.

W. M. SLOANE (COLLEGE OF NEW JERSEY),
Chairman.
D. A. SARGENT (HARVARD COLLEGE),
Secretary.

The recommendations of this circular failed of adoption by the concurrent action of five colleges, and no subsequent attempt has been made to secure an intercollegiate athletic code. Of the code as proposed it may be said that, though many of the colleges taking part in the conference concurred as to its general principles, it was judged that its detailed working would entail hardships in many cases. The entire field of athletics can hardly be controlled in accordance with a single set of rules. It seems more feasible to have the rules under which intercollegiate contests shall take place enacted by special conferences touching each athletic interest, *e. g.*, foot ball and base ball; care being taken to have the student organizations represented, as well as the different Faculties.

HARVARD'S ACTION REGARDING FOOT BALL.

Harvard, failing to secure the co-operation of other colleges for the regulation of intercollegiate sports, has very recently forbidden the football elevens of the university from engaging in any more intercollegiate matches. This action was due to the belief that foot ball had become a "brutal and dangerous" game. At Princeton, even more recently, *i. e.*, in February, 1885, the Faculty have, it is reported, conditioned their consent to future participation by Princeton players in intercollegiate foot-ball matches on the revision and improvement of the present objectionable rules of the game. It is a curious fact that our imitative collegians, in adopting the Rugby game of foot ball, as has been so generally the case, have adopted one of the roughest of the English varieties of the game. The influence of "Tom Brown at Rugby" may be partly responsible for this. Foot-ball is played in such different fashions at the great English schools that interschool matches are less general in England than are intercollegiate matches in the United States.

We have given the Yale view of athletics as expounded by Professor Richards, because that exposition may stand as the best utterance of those who favor non-interference by college authorities in college athletics. The following report to the Faculty of Harvard University by its standing committee on athletics, is here given as an expression of the Harvard idea of regulating what is deemed by them the most objectionable of athletic games, viz., foot ball:

To the Faculty of Harvard College:

GENTLEMEN: On the 22d of November, 1883, the committee on athletics, believing that the game of foot ball had begun to degenerate into a brutal and dangerous contest, informed the captain of the Harvard eleven that the team could not be allowed to take part in any further intercollegiate match-game until substantial changes in the rules had been made. According to the rules then existing a player could hack, throttle, buff, trip up, tackle below the hips, or strike an opponent with closed fist three times, before he was sent from the field. Changes in the rules were made immediately, and they were subsequently adopted by the intercollegiate association. In June of the present year the committee said to the captain of the Harvard team for 1884 that the eleven would be allowed to play during the following season, on the understanding that the games should be regarded as a test whether or not the changes of rules had resulted in substantial changes of the character of the game.

At the beginning of this season your committee decided to attend the games of the intercollegiate series, and to observe them carefully. We have attended four games, the three of the Harvard-Yale-Princeton series, and one between Wesleyan and the University of Pennsylvania, played in New York on the morning of Thanksgiving day for the third place among the college teams. At each of the games we stationed ourselves in different parts of the field, and observed and carefully noted what seemed to us the objectionable feature of the play. Two of the games, those in which the Harvard team took part, were very one-sided contests. In the Yale-Princeton and Wesleyan-Pennsylvania games the opposing teams were very evenly matched. Of the four games, the Yale-Harvard game was the least objectionable, and the Wesleyan-Pennsylvania game was the worst.

In every one of these games there was brutal fighting with the fists, where the men had to be separated by other players, or by the judges and the referee, or by the bystanders and the police. We saw one such case in the Harvard-Princeton game, two in the Harvard-Yale game, three in the Yale-Princeton game, and three in the Wesleyan-Pennsylvania game.

In addition to these fights there were numerous instances where a single blow was struck, instances that occurred in every one of the games. A man was felled by a blow in the face in the Harvard-Princeton game, in the Harvard-Yale game, in the Yale-Princeton game. In the Wesleyan-Pennsylvania game a man was thrown unfairly, out of bounds, by an opposing player. Then, as he was rising, but before he was on his feet, his antagonist turned, struck him in the face and knocked him down, and returned in triumph with the ball.

In all the games the manifestation of gentlemanly spirit was lacking—the spirit that scorns to take an unfair advantage of an opponent. The teams *played to win* by fair means or by foul.

Unfair play, often premeditated and sometimes concerted, was a prominent feature in all of the games, and, although not always successful, was rarely punished. Intentional off-side play and unlawful interference with opponents who were not running with the ball were the rule rather than the exception. The game is demoralizing to the spectators mainly through its brutality; unfair play they usually fail to recognize. We often heard cries of "Kill him!" "Break his neck!" "Slug him!" "Hit him!" "Knock him down!" from those around us. That the game is dangerous needs no argument. The Rugby game of foot ball, under the present rules, might perhaps be played with advantage where public opinion was strong enough to make deliberate attempts at unfair or brutal play impossible. There is, unfortunately, no such controlling sentiment among college students. The nature of the game puts a premium on unfair play, inasmuch as such play is easy, is profitable if it succeeds, is unlikely to be detected by the referee, and if detected is very slightly punished. If two teams are at all evenly matched, and one plays a gentlemanly and the other an unfair game, the self-respecting team will always be beaten. The game is so complicated, so confused, and covers so much ground, that no referee, however honest and determined, can see half of what is going on, especially since the judges, who were originally intended to help him in securing fair play, have developed into captains of their teams, and purposely distract his attention and increase his difficulties.

After deliberate investigation we have become convinced that the game of foot ball, as at present played by college teams, is brutal, demoralizing to players and spectators, and extremely dangerous; and we do not believe that at the present time, and with the prevailing spirit, any revision of the rules made by the intercollegiate association could be effective in removing these objectionable features.

We therefore recommend that all games of foot ball be prohibited to students of the college, except those played by our own men on our own grounds, and that these shall be allowed only in case it shall prove possible to eliminate all objectionable features from the game. We believe that foot ball, played in the proper spirit, under proper conditions, may be made one of the most valuable of college sports, and we should deprecate its permanent loss. We have conferred with students interested in the game at a meeting where there was great unanimity of opinion concerning its present objectionable character, and have grounds for hope that means may be devised to make it a credit, in place of a disgrace, to the university.

JOHN WILLIAMS WHITE,
W. E. BYERLY,
D. A. SARGENT,
Committee on Athletics.

CAMBRIDGE, *December* 2, 1884.

The recommendation of this report, "that all games of foot ball be prohibited to students of the college," was adopted by the Faculty by a vote of twenty-four to five.

THE POLICY OF THE HARVARD COMMITTEE ON ATHLETICS.

Undoubtedly the firm stand taken at Harvard will have a stimulating and salutary effect upon the future action of other colleges. For the purpose of showing that good results have already been secured through the efforts of the committee on athletics, the following extract from the correspondence of the New York *Evening Post* is subjoined:

CAMBRIDGE, *Mass.*, *February* 12, 1885.

Athletics at Harvard are slowly undergoing a great change—a change which, in the judgment of all who have without prejudice watched the movement, is for the better. In former days, when the Hemenway Gymnasium was as yet unbuilt, and the little octagonal building which is now the university carpenter-shop was the only place in which Harvard muscle could be cultivated, the college was overrun with ruffians—"professionals" in the worst sense of the term—who exhibited their feats to the students for hire. But this was not the worst. In many cases the object of the "professional" was not the earning of honest money by the teaching of his specialty, but the inducing of young men to go with him to the city under pretense of seeing some athletic exhibition, in order there to initiate them into all kinds of vice and to swindle them of their money.

This state of affairs has passed away. "Roughs" no longer have possession of the gymnasium, but instead there are honest instructors and a capable manager. But the war against professionalism still goes on. In this war the chief battlers are the three men who form the athletic committee.

The committee is not appreciated by the students; it is fashionable among them to joke about, oppose, and argue against all its acts. They say that Latin and Greek professors are not capable of managing athletics; that their actions are uncalled for and inefficient; that, finally, the committee has no reason for existence. The only thing that the students as a body will allow to the committee is "good intentions."

But this estimate is not supported by facts. The facts are that the members of the athletic committee are all trained athletes as well as cultured men; that they have the good practical knowledge necessary for the conduct of athletic affairs, and that they have a keen and friendly interest in all sports of the collegians. In fighting against a tangible evil their actions have been called for, and in a great measure efficient.

To those who are interested in Harvard athletics a clear statement of what this committee is, will be interesting. It is a committee of the Faculty, the special duty of which is the overseeing of all the athletic interests of the college. It may be said with truth that the athletic committee *is* the Faculty as far as athletics are concerned; for any suggestion which they may make to the Faculty is almost certain to be approved by that body.

To those who have watched the progress of affairs from the first forbidding of base-ball contests with professional players up to the late foot-ball manifesto and the dismissal of Colonel Bancroft as coach of the crews, the committee may seem to lack plan and to be often inconsistent. But this is not so, their policy in every case being "the greatest amount of exercise for the greatest number."

Under this policy foot ball, confined practically to eleven men, and base ball, also limited to a small number of men, have been discouraged, while all gymnastic work in which every member of the college can take part, all track athletics, which by their nature are open to an almost unlimited number of men, tennis, etc., have been encouraged.

To be convinced that this is so, one has only to look at the great prosperity of the Athletic Association, the success of the Harvard Mott Haven teams, and the great popularity and large entries in the fall, winter, and spring athletic contests. Wherever, in short, the scientific accuracy with which any game comes to be played debars from enjoyable exercise the general student, for whose benefit all sports ought to be, that scientific accuracy has to be given up.

All exercise at college is for the purpose of keeping body and mind in fit condition for study. When the means to this result become an end, then sport is abused and reform is necessary. In short, the present policy of Harvard is that there should be more sport and fewer "sports" about the college. The encouragement given to boating here is often advanced to show that the acts of the committee are inconsistent. The explanation is this: the real interest of the college in boating centers in the class races. Each class has its own crew, from which the 'varsity draws its material, and thus affords exercise to many men. But the class nines and the class elevens exist only in name. Everything centers in the 'varsity nine or eleven and in the contest with Yale. If the interest were centered in contests between evenly-matched nines or elevens from the different classes, brighter days would dawn for foot ball and base ball at Harvard.

Indeed, the dissatisfaction with the athletic committee, when examined closely, seems to arise wholly from the popular jealousy of Yale and the disappointment of men who hoped to win popularity among their fellows by helping to gain victories over a rival college. But the committee treats with supreme indifference the question whether Yale is to be beaten or not, and gives its attention wholly to making enjoyable exercise attainable by every student of the college, and it is more anxious to give this enjoyable exercise to the weak than to the strong.

One word about professionals. What is a professional? He is a man who depends upon the exercise of his specialty to make a living. Such a man has frequently associations which unfit him to come in contact with young men in college. A man who teaches only, and who is sober and honest, would not be ranked as a "professional." This is the general rule of employment of coaches and trainers of Harvard.

From the data here given it is easy to see what will be the future of Harvard athletics. If, as it is hoped, every man, no matter how small or weak, can have plenty of enjoyable exercise, then this future will be bright indeed.

We have now traced in outline the growth and development of gymnastics, military drill, and athletics, so far as the principal institutions of superior instruction in the United States are concerned. Very few of such institutions combine these three features in their course of physical training, as was the case in Fellenberg's schools, at Hofwyl, early in the century. At Cornell University, however, military and gymnastic drill are required of certain classes of male students, and calisthenics are obligatory on the female students.

PHYSICAL EDUCATION FOR SCHOLASTIC WOMEN.

ASSOCIATION OF COLLEGIATE ALUMNÆ.

The schools and colleges for women are, as a class, not so well organized on the side of physical training as are those for young men. That the physical education of women is likely to receive more intelligent attention than has been the case hitherto, may be inferred from the appended circular of the Association of Collegiate Alumnæ.

Physical education.—The members of the Association of Collegiate Alumnæ have had their attention drawn very forcibly to the present need for physical education among the women in our universities and colleges. They fully believe that college education *per se* is physically beneficial, and that college statistics show an average of health among women students higher than that among women at large; but they also realize that the physical status of American women of the educated class is painfully low, and they believe that the colleges ought to be among the first to take measures against this dangerous deterioration of physique. The following schedule, however, shows how fragmentary has been the work done hitherto in the nine institutions represented in the association:

Lectures on physiology.	Lectures on hygiene.	Gymnasium.	Calisthenics (under supervision).	Physician.	Hospital and nurse.	Voluntary boating, skating, &c. (Lake.)
Oberlin	Oberlin	Oberlin				
Vassar		Vassar	Vassar	Vassar	Vassar	Vassar
Cornell	Cornell	Cornell			Cornell	Cornell
Michigan						
Wisconsin		Wisconsin				Wisconsin
Boston						
Smith	Smith	Smith	Smith			
		Wellesley	Wellesley	Wellesley	Wellesley	Wellesley
Wesleyan		Wesleyan				

Vassar, Smith, and Wellesley are conducted on the dormitory system, Smith maintaining separate "cottage" dormitories, and Wellesley giving choice of large or small buildings.

Oberlin, Wisconsin, Cornell, and Wesleyan do not require students to board in college buildings.

Michigan and Boston do not provide boarding places.

One hour of physical exercise daily is required of students by Vassar and Wellesley.

A knowledge of elementary physiology is required for admission by Cornell.

The attainment of a certain standard of health is required for admission by Wellesley.

In view of these facts, the members of this association, as women college graduates, most earnestly and respectfully urge the following suggestions upon those interested in the higher education of women, and especially (1) upon parents, (2) upon the governing bodies of institutions which grant degrees to women, and (3) upon the women studying in these institutions.

I.

The members of the association are convinced that the low standard of health among women in and after college life is largely due to their common lack of physical training and disregard of the laws of health before they enter college. At sixteen it is often too late to undo all the mistakes made during the most important years of a girl's physical life. They therefore wish to call the careful attention of parents everywhere to the following evils among school-girls, which threaten every interest of educated women.

(1) Social dissipation and excitement, which is neither amusement nor recreation. Girls are too often stimulated to shine socially and intellectually at the same time. A mother proves her daughter's perfect health by saying, "She has been able to go to parties or entertainments four or five evenings a week all winter, and she stands at the head of her class!"

(2) Habitual loss of sufficient and healthy sleep.

In a New York Academy, a class of sixty girls, between the ages of twelve and eighteen, chanced to be asked by a recent visitor for the time they retired the night before. The average was found to be twenty minutes before midnight; but no surprise was manifested by teachers nor regret by pupils.

(3) Irregularity and haste in taking food, the use of confectionery in the evening, and the omission of breakfast.

The principal of a large girls' school in Philadelphia lately said that so many habitually came to school without having taken sufficient breakfast, and taking little or no lunch, that he had been compelled, in order to obtain good mental work, to have a warm lunch furnished, and to insist upon the scholars taking it in the middle of the morning.

(4) Tight, heavy, and insufficient clothing, which frightfully increases the tendencies to consumption and spinal diseases.

A physician of wide experience confidently states that this cause alone has incapacitated more women than over-study and over-work of all kinds.

(5) The lack of sufficient out-door exercise. When a proper amount of time is devoted to such exercise, no time will be left for over-study.

(6) The ambition of parents and daughters to accomplish much in little time, which sends students to college either hurriedly and imperfectly prepared, or with a thorough preparation gained at the expense of health.

(7) The usual postponement of instruction in the laws of physiology and hygiene to a college course. Thus, daughters go out from their mother's care wholly ignorant of the common laws by which they may increase and preserve the health upon which every hope and ambition depends.

II.

The members of this association believe that these faults in home and school training, as well as those found in college schemes, can be reached most effectually through the colleges. And, while recognizing the efforts already made in this direction, they respectfully recommend to the consideration of college-governing bodies the following remedies for existing evils:

(1) The introduction of a consistent, thorough, and scientific course of physical education for women.

(2) The appointment of a thoroughly competent woman as an instructor in this department, who shall superintend the gymnasium, give practical courses of lectures, and be, so far as possible, responsible for the general health of the women in her classes.

Where the dormitory system obtains, the appointment of a resident physician is also urged.

(3) The provision of an adequately equipped gymnasium.

(4) The provision of one or more courses of lectures by non-resident specialists on physiology, hygiene, sanitation, heredity, athletics, gymnastics, etc.

(5) The provision of special libraries on subjects pertaining to physical education.

(6) Careful study in the construction of buildings for recitation and dormitory purposes, with special reference to counteracting the acknowledged evils of the dormitory system.

(7) The requirement (whenever practicable) that candidates for admission shall reach a certain standard of attainment in physical education. Physical health is already required for admission by Wellesley College, and a knowledge of physiology by Cornell University.

III.

The women studying in our colleges are urged by the women graduates of these colleges—

(1) To bear constantly in mind in their own work the fact that the best intellectual results cannot be attained without perfect physical health.

(2) To maintain a constant and sensible watch over their own habits as regards sleep, exercise, food, dress, etc. Failure to take the requisite amount of sleep, food, or exercise, should be lamented as much as failure in recitation.

(3) To form athletic associations for the promotion of wholesome exercise and the stimulation of public opinion.

(4) To collect comparative statistics relating to the age, height, weight, size of waist, breadth of chest, weight of clothing, etc., of women college students. Such statistics should be taken at regular intervals throughout the college course. As taken by Dr. Sargent, of Harvard University, in his ladies' gymnasium at Cambridge, they have proved valuable as well as interesting.

The association hopes to publish a series of short, practical monographs on these and similar subjects at some future time. Meanwhile, information in regard to the practical working of these suggestions, many of which are already in operation, may be obtained on application to any of the officers of the association: President, Mrs. J. F. Bashford, University of Wisconsin, Auburndale, Mass.; vice-president, Miss F. M. Cushing, Vassar College, 8 Walnut street, Boston, Mass.; secretary, Miss Marion Talbot, Boston University, 66 Marlborough street, Boston; treasurer, Miss Margaret Hicks, Cornell University, Cambridge, Mass.; directors, Miss A. E. F. Morgan, Oberlin College, Wellesley, Mass.; Mrs. E. H. Richards, Vassar College, Jamaica Plain, Mass. Miss A. E. Freeman, University of Michigan, Wellesley, Mass.; Miss K. E. Morris, Smith College, Hartford, Vt.; Miss H. M. Peirce, Wellesley College, Newton Center, Mass.

PHYSICAL TRAINING AT WELLESLEY COLLEGE.

Wellesley College, in Massachusetts, has a more highly organized department of physical training than any other institution at present devoted to the education of women. The Sargent system is followed and out-of-door games are encouraged. Since 1880 all applicants for admission have been required to present a certificate from some reputable physician that they were physically fit to undertake the course of study prescribed in the institution. Out of 485 who presented such certificates in 1882–'83, 23 were found within nine months to be unable to continue their studies on account of ill health. During the same year 470 students underwent physical examination touching the condition of "spine, lungs, and heart," made by Miss E. H. Jones, M.D., the resident physician. Of these, 32 were found to have "narrow chests with poorly developed lungs;" 9 had valvular disease of the heart; 2 had hypertrophy of the heart; 16 had curvature of the spine; and 7 had spinal irritation.

No woman's college in America, however, has a gymnasium which approaches in costliness and completeness that of Bryn Mawr College, soon to be opened, to which allusion has been made already.

INSTRUCTION IN HYGIENE.

SUGGESTION OF THE APOSTLE ELIOT.

Lectures upon health topics were not uncommon in American colleges long before any systematic effort was made by any of them to provide its students with practical facilities for living in obedience to the laws therein enunciated. Even here American educators cannot lay claim to originality, for in Basedow's Philanthropinum at Dessau, in 1774, lectures were given by a physician on human anatomy and physiology. It is not possible for the writer to state when such lectures were first given to American students; but it is safe to surmise that their date is not earlier than the year 1647, when the following rather vague suggestion of a course of medical instruction for his Indian scholars was penned by the Apostle Eliot. "I have thought in my heart," he wrote to Thomas Shepard, the pious minister of Cambridge in Massachusetts, "that it were a singular good work if the Lord would stir up the hearts of some or other of his people in England to give some maintenance toward some schoole or collegiate exercise this way, wherein there should be anatomies and other instructions that way."

LECTURES AT HARVARD.

In 1781, Dr. J. Warren, father of Dr. J. C. Warren, alluded to in the early part of this paper as a lecturer on health to the students of Harvard College, at the request of the Boston Medical Society, "demonstrated a course of anatomical lectures at the hospital in Boston." This course was "quite public," and "some of the students of Harvard College were permitted to attend." In 1784 the Harvard Medical School was opened at Cambridge. Its first quarters proving unfit, the Holden Chapel was fitted up, and lectures in anatomy, surgery, and materia medica were delivered there. "The number of medical students who attended was small, but as the president permitted the two elder classes to attend the lectures the rooms were well filled."

It is not clearly shown in such statements as have come to our notice that instruction on the nature of the human body has regularly been provided for Harvard students since the time of those lectures alluded to as having been delivered in Holden Chapel; but it is stated in Quincy's "History of Harvard University" that in 1810, when the medical school was removed to Boston, "the medical professors were required to deliver an annual course at Cambridge, adapted to resident graduates and the Senior class of undergraduates." Dr. J. C. Warren, in 1825, and Dr. James Jackson, in 1830, were in the habit of giving such lectures. It is a part of Dr. Sargent's duty at the present day to deliver lectures on personal hygiene and physical training to the stupents of the university.

LECTURES AT DARTMOUTH.

The first published announcement of the course of instruction at Dartmouth College is contained in its catalogue for 1822. From it we learn that the members of the two upper classes were "permitted to attend all the lectures of the medical professors by paying a small fee." In 1825 this fee amounted to 67 cents a term for Juniors, and to twice that sum for Seniors. At present the Freshmen at Dartmouth are required to attend six lectures, and the Seniors twelve lectures, delivered by the professor of science and practice of medicine in the medical school.

INSTRUCTION IN HYGIENE AT OTHER COLLEGES.

Colleges of the present day very generally aim to give at least text-book instruction in "anatomy, physiology, and hygiene." At Amherst, Dr. Hitchcock instructs, both by lectures and recitations, the two lower classes in these subjects, especial stress being laid upon hygiene, and such has been his custom during almost all of his term of office, *i. e.*, since 1861. At Cornell University careful provision has been made ever since its foundation, in 1868, for the study of human anatomy, physiology, and hygiene. At Cornell, moreover, applicants for admission are required to pass an examination in physiology.

There is such a variety of usage in regard to the character and amount of instruction in hygiene in our principal colleges that the facts concerning it, so far as the inquiries made by the writer have elicited any information on this head, may best be set forth in tabular form.

Table No. 18, Part I.—*Amount and character of the instruction, practical and theoretical, in hygiene, in the principal colleges and universities of the United States.*

Note.—*r* stands for required; *o*, optional; *m*, males; *f*, females; *t*, times; *hr*, hour; *b*, building; *rm*, room.

	Name of institution.	Location.	Name and title of teacher.	Number of lectures given in 1882-'83.	Number of recitations conducted in 1882-'83.	Attendance upon lectures.
1	Amherst College	Amherst, Mass	E. Hitchcock, sr., M. D., M. A., prof. of hygiene and physical education.	40	40	70 1st yr. *r*; 88 2d yr. *r*.
2	Allegheny College	Meadville, Pa	Prof. of natural history	1 term *r*	1 term ? *r*	
3	Augustana College	Rockford, Ill	J. Lindahl, Ph. D., prof. of natural science		1881-'82, 74 *r*.	
4	Beloit College	Beloit, Wis	None reported	Not given	Not given	
5	Boston University	Boston, Mass	do	do	do	
6	Bowdoin College	Brunswick, Me	L. A. Lee, B. A., prof. of geology and biology	10 pers. hyg	44	28 1st yr. *r*.
7	University of California	Berkeley, Cal				
8	Carleton College	Northfield, Minn	L. W. Sperry, M. D., prof. of geology, zoology, and physiology.	45	75	All of 3d yr. *r*; prep. and Eng. *o*.
9	Central Tennessee College	Nashville, Tenn	G. W. Hubbard, M. D., lecturer; R. F. Boyd, M. D., teacher of physiology.	24	100	354; 169 *m*, 185 *f*.
10	Central University	Richmond, Ky	A. W. Smith, D. D. S	25	25	15 *r*; 10 *o*.
11	Cornell University	Ithaca, N. Y	B. G. Wilder, M. D., prof. of physiology, comparative anatomy, and zoology.	6 pers. hyg		Nearly all Freshmen in university.
				36 phys		All Sophomores.
12	Dartmouth College	Hanover, N. H	C. P. Frost, M. D., prof. of science and practice of medicine (Dart. Med. School).	18; 6 to 1st yr., 12 to 4th yr.		150; 86 1st yr., 64 4th yr.
13	De Pauw University	Greencastle, Ind	Prof. Baker, M. D			250 *m* in 1883.
14	Drury College	Springfield, Mo	Miss L. M. Saunderson (for 1883-'84), instructor.			15 *m* and 20 *f*, *r*; 20 *m* and 25 *f*, *o*.
15	Fisk University	Nashville, Tenn	F. A. Chase, A. M., prof. of physical sciences	20	50	6 3d yr.; 5 *m*, 1 *f*, *r*.
16	Harvard University	Cambridge, Mass	D. A. Sargent, A. B., M. D., asst. prof. of physical training and director of gymnasium.	24		All students *o*.
17	Haverford College	Haverford, Pa	W. A. Ford, M. D., instructor in physical training. (?)			Examination, *r*; exercise, *o*.
18	Iowa College	Grinnell, Iowa	H. W. Parker, A. B., prof. of natural history		75	
19	Johns Hopkins University	Baltimore, Md	E. M. Hartwell, Ph. D., M. D., instructor in physical culture, 1882-'83.	12		30 *o*.
20	Kansas State Agric'l Coll	Manhattan, Kans	E. M. Shelton, B. Sc., professor	26	70	42 2d yr. *o*; mil. science

TABLE NO. 18, PART I.—*Amount and character of the instruction, practical and theoretical, in hygiene, in the principal colleges and universities of the United States*—Continued.

	Name of institution.	Location.	Name and title of teacher.	Number of lectures given in 1882-'83.	Number of recitations conducted in 1882-'83.	Attendance upon lectures.
21	Lafayette College	Easton, Pa	Traill Green, M. D., prof. of chemistry; Charles McIntyre, A. M., M. D., lecturer on hygiene.	1 weekly 1st term.		82 *m*.
22	Lehigh University	South Bethlehem, Pa	J. Green, M. D., lecturer	20		106 1st yr. *r*.
23	Massachusetts State Agricultural College.	Amherst, Mass	J. M. Tyler, B. A., prof. biology (Am. College)	39	65	20 1st yr. *r*.
24	University of Michigan	Ann Arbor, Mich	V. C. Vaughan, Ph. D., M. D., professor of physiological and pathological chemistry.	30		100; 80 *m*, 20 *f*. *o*.
25	University of Minnesota	Minneapolis, Minn	C. N. Hewitt, M. D., prof. of public health, and Sec'y State Board of Health.			Attendance on instruction.
26	University of Nashville State Normal College.	Nashville, Tenn	Some one of instructors			Attendance required.
27	National Deaf-Mute College	Washington, D. C				
28	College of New Jersey	Princeton, N. J	J. S. Schenck, M. D., LL. D., lecturer (?)			
29	Ohio Wesleyan University	Delaware, Ohio	E. T. Nelson, Ph. D. professor	13	39	122; 82 *m*, 40 *f*. *r* all years.
30	Pennsylvania College	Gettysburg, Pa	J. B. Scot will lecture on anatomy, physiology, and hygiene, 1883-'84.			
31	Smith College	Northampton, Mass	Miss Ruth Hoppin, A. B., instructor	14		284 (?) *r*.
32	Syracuse University	Syracuse, N. Y	J. J. Brown, LL. D., prof. chemistry and physics	26		117 *r*; examined, too.
33	University of Tennessee	Knoxville, Tenn	H. Nicholson, B. A., prof. of natural history	30	30	21 2d yr. *r*.
34	Texas State Agric'l Coll	College Station, Tex	Chairman of Faculty			*r* in 1883-'84.
35	Tufts College	Medford, Mass				
36	U. S. Military Academy	West Point, N. Y	Hygiene not formally taught. The entire training is based on personal hygiene.			
37	U. S. Naval Academy	Annapolis, Md	do			
38	Vassar College	Poughkeepsie, N. Y	Mary E. Allen, M. D., professor and resident physician.	6	85	60 *f*, *o*.
39	Vanderbilt University	Nashville, Tenn				
40	Virginia State Agricultural College.	Blacksburg, Va	None reported	116		

41	Washington University	Saint Louis, Mo	J. H. Jenks, M. D	20		12 4th yr. *r.*
42	Wellesley College	Wellesley, Mass	Miss E. M. Mosher, M. D	10		250 *f*, *o.*
43	Wesleyan University	Middletown, Conn	W. N. Rice, Ph.D., prof. of natural history	20	28	4 1st yr. 5 2d yr., 33 3d yr., *r.*
44	University of Wooster	Wooster, Ohio	L. Firestone, M. D., prof. of anatomy, physiology and hygiene.	28	28 4th yr; none 2d yr.	38; 34 *m*, 4 *f*, 4th yr. *r.*
45	University of Wisconsin	Madison, Wis	E. A. Birge, Ph. D., prof. of zoology	75		15; 9 *m*, 6 *f*. *o.*
46	Yale College	New Haven, Conn	S. J. Sanford, M. D., professor	12		To Freshmen.

TABLE No. 18, PART II.—*Amount and character of the instruction, etc., in hygiene, in the principal colleges and universities in the United States.*

NOTE.—*r* stands for required; *o*, optional; *m*, males; *f*, females; *t*, times; *hr*, hour; *b*, building; *rm*, room.

	Name of institution.	Attendance upon recitations.	Author of text-book used.	Date of adoption of teaching of hygiene.	Subjects taught.	Has a gymnasium or drill-hall.
1	Amherst College	70 1st yr. *r*, 88 2d yr		1860	Human anatomy, physiology, and hygiene	*b* Pratt Gymnasium.
2	Allegheny College				Physiology and hygiene	None reported.
3	Augustana College	*r* B. A. and B. S. candidates.	Hutchinson	1876	Anatomy, physiology, and hygiene	Cheap frame, 1883, 24 x 96.
4	Beloit College					*b* 60 x 40.
5	Boston University			1874	Anatomy, physiology, and hygiene required	2 *rm*, each 35 x 20.
6	Bowdoin College	26 1st yr. *r*	Martin	1880	Anatomy, physiology., and personal hygiene	Gymnasium discontinued; new one contemplated.
7	University of California					*b* Harmon Gymnasium.
8	Carleton College	*r* All beginning prep. and Eng. course.	Hutchinson	1875	Anatomy, physiology, and hygiene	*rm* 1883-'84, 40 x 40.
9	Central Tennessee College	354	Cutter	1872	Anatomy, phys., public and personal hygiene	Free gymnasium.
10	Central University	15 *r*, 10 *o*	Dalton	1880	Anatomy, physiology, and hygiene	"On the grounds."
11	Cornell University		Wilder; Martin	1868	Personal hygiene and physiology	*b* Armory and gymnasium, 150 x 60.
12	Dartmouth College			1867, 1822;	Public and personal hygiene	*b* Bissell Hall.
13	De Pauw University			1876	Anatomy, physiology, and hygiene	*rm* Drill-room, 100 x 50.
14	Drury College			1874	Anatomy, physiology, and personal hygiene	None reported.
15	Fisk University	6 3d yr., 5 *m*, 1 *f*, *r*	Martindale	1874		School-rooms used.
16	Harvard University			1781		*b* Hemenway Gymnasium.
17	Haverford College			1880	Anatomy, physiology, and hygiene	*rm* 82 x 25.
18	Iowa College	3d yr. acad. students *r*. Some others *o*.	Cleland		do	*rm* 42 x 70, unfitted.
19	Johns Hopkins University			1882-'83. 1884-'85.	Anatomy, physiology, and hygiene, 1884-'85	*b* 1883.
20	Kansas State Agricultural College	30 *r*, 3d yr., 10 *m*, 11 *f*	Martin	1863	Anatomy, physiology, and hygiene	*rm* Armory, 40 x 90.
21	Lafayette College			1858	Anatomy and personal hygiene	*b* Gymnasium.

22	Lehigh University				Physiology and hygiene	*b* Lehigh University Gymnasium.
23	Massachusetts State Agricultural College.	20 2d yr. *r*	Martin	1867	Anatomy, physiology, and personal hygiene	*b* Drill-hall, 120 x 60.
24	University of Michigan				Hygiene and sanitary science	Has none.
25	University of Minnesota	(Undescribed) 25 *o*, 15 *m*, 10 *f*.	Dalton, 1880; required of all.	1869	Public and personal hygiene	*b* Military building, 120 x 140. Gymnasium to be built.
26	University of Nashville State Normal College.	28 1st yr. *r*		1875	Physiology and hygiene, 1st year students	*b* Gymnasium, 80 x 30. Sept., 1884.
27	National Deaf-Mute College					*b* 62 x 48.
28	College of New Jersey				Personal hygiene by personal advice of Mr. Goldie; human anatomy taught.	*b* 78 x 52.
29	Ohio Wesleyan University	122, 82 *m*, 40 *f*	Huxley; Foster	1872	Human anatomy and physiology	None.
30	Pennsylvania College					*b* McCreary Gymnasium, 50 x 90.
31	Smith College			1875	Anatomy, physiology, *o*. Personal hygiene, *r*.	*b* Gymnasium.
32	Syracuse University			1871	Anatomy, physiology, and pub. and pers. hyg	None reported.
33	University of Tennessee	21 *r*, 2d yr	Huxley and Youmans.		Comparative anatomy and physiology. Hygiene taught incidentally.	do.
34	Texas State Agricultural College			1883-'84	Human anatomy, physiology, and pers. hyg	do.
35	Tufts College			1855	Anatomy and physiology	*b* New, 90 x 45.
36	U. S. Military Academy			1802?	Personal hygiene inculcated	*rm* Gymnasium projected.
37	U. S. Naval Academy			1845	do	do.
38	Vassar College	7 *f*, *o*	Foster	1865	Anatomy and phys., *o*. Personal hygiene, *r*	*rm* Improvem'ts projected.
39	Vanderbilt University				Not taught	*b* 90 x 60.
40	Virginia State Agricultural College				None reported, exercises in mil. sci. and tactics.	None.
41	Washington University				Anatomy and physiology	*b*.
42	Wellesley College			1875	Physiology and personal hygiene	*rm*.
43	Wesleyan University	4 1st yr., 5 2d yr., 33 3d yr.; students.	Huxley	1839	Anatomy, physiology, and hygiene	*b* Gymnasium, 70 x 40.
44	University of Wooster			1883	Anatomy and physiology	*b* Gym. hall, 48 x 96, 1882-'83.
45	University of Wisconsin		Huxley and Youmans.		Anatomy, physiology, and hygiene	*b* 100 x 40.
46	Yale College			At an early date.	Hygiene	

TABLE NO. 18, PART III.—*Amount and character of the instruction, etc., in hygiene, in the principal colleges and universities of the United States.*

NOTE.—*r* stands for required; *o*, optional; *m*, males; *f*, females; *t*, times; *hr*, hour; *b*, building; *rm*, room.

	Name of institution.	Name and title of head of the department. (*a*=has assistant.)	Style of drill adopted. (Mil =military drill: S G.=Sargent gymnastics; L. G.=light gymnastics.)	Keeps vital statistics. (Y=yes; N=no.)	Attendance on drill in 1882-'83; required unless otherwise stated.	Remarks.
1	Amherst College	E. Hitchcock, sr., M. D., prof. of hygiene and physical education, *a* and M. D.	L. G. *r*, S. G.	Y.	352 *m*, 4 *t*, ½ *hr*, 31 weeks	Has a medical adviser, head of department.
2	Allegheny College	G. O. Webster, 1st lieut. U. S. A.	Mil. *o*	N.	*o* 85 *m*, 3 *t*, 1½ *hr*, weekly	
3	Augustana College	No head or organization, 1883		N.		Course changed, 1881-'82.
4	Beloit College	Department unorganized; drill-masters, upper-class men.	L. G. *r* of all	N.	All, 222 *m*?	
5	Boston University	A. H. Howard and Mad. Potè	L. G. *o*, S. G. *o*	Y.[1]		Physiology may be elected in Junior year.
6	Bowdoin College			N.		Practical demonstrations in physiology given.
7	University of California	G. C. Edwards, Ph. B., instructor in mathematics and colonel of cadets.	Mil. *r*	N.	All able-bodied *m*, 143, 2 *t*, 1 *hr*, 37 weeks.	Hygiene not a required study.
8	Carleton College	No teacher of gymnastics	L. G. *o*, roller skating.	Y.[2]	*o* for ladies	
9	Central Tennessee College					Dr. Hubbard is medical adviser for colored pupils.
10	Central University	None reported				
11	Cornell University	E. Hitchcock, jr., M. D., M. A., acting prof. of physical culture and director of gymnasium, *a*, 1 male and 1 female. W. S. Schuyler, 1st lieut. U. S. A., professor of military science and tactics.	Mil. *r*, S. G. *r*	Y.	All unexcused males of two lower classes have Mil. *r*, 3 *t*, 1 *hr*, 36 weeks; Mil. *o*, for upper classes; S. G. *r*, for all males needing it, in director's opinion, 5 *t*, 1 *hr*, 36 weeks; L. G. *r*, 5 *t*, 1 *hr*, 36 weeks, for all unexcused female students	Since 1877, all entering the university have been required to pass an examination in elementary physiology.
12	Dartmouth College	T. W. D. Worthen, A. B., assoc. prof. of mathematics and instructor in gymnastics.	Lewis gymnastics *r*	N.	1st year, 4 *t*, ½ *hr*, 11 weeks, 80 *m*; 2d year, 2 *t*, ½ *hr*, 11 weeks, 20 *m*.	20 2d year elected gymnastics, 1882; since 1822, 3d and 4th year *m* allowed medical lectures.

13	De Pauw University	J. B. Gol, 2d lieut. U. S. A., 1883-'84	Mil. *r* for 3 y'rs, 1876	N.	250 *m*	Not detailed from the U. S. army.
14	Drury College	A. B. Brown, 1883-'84, instr. in mil. drill	Calisthenics	N.	All in 1883-'84, 10 minutes daily	
15	Fisk University					
16	Harvard University	D A. Sargent, A. B., M. D, asst. prof. of physical training and director of Hemenway Gymnasium.	S. G. *o*	Y.	*o* with all members of the university.	80 per cent. elect gymnastics.
17	Haverford College	W. A. Ford, M. D., director of gymnasium	S. G. *o*	Y.	Examination *r*, exercise *o*	
18	Iowa College	None reported				
19	Johns Hopkins University	E. M. Hartwell, Ph.D., M. D., instructor in physical culture.	S. G. *o* for grad.; *r* for matric., 1884-'5.	Y.	Matriculates, 1884-'85; *o* for 240, 1883-'84.	
20	Kansas State Agricultural College.	A. Todd, B. A., 1st lieut. U. S. A	Mil. *o*	N.	*o* 100 *m*: 65 the 1st, 20 the 2d, 12 the 3d, 3 the 4th year.	3 *t*, 50 minutes, for 36 weeks.
21	Lafayette College	J. Updegrove, A. B., adjunct director; Chas. McIntyre, A.M., M.D., med. dir.	L. G. *r*, S. G	Y.		
22	Lehigh University	W. H. Herrick, B. A., director of gymnasium.	S. G. *r*, L. G. *r*	Y.	219 *r*, 10 5th year, *o*; 10 *t*, ¾ *hr*, all year.	
23	Massachusetts State Agricultural College.	V. H. Bridgman, 1st lieut. U. S. A	Mil. *r*	N.	108, 3 *t*, 1 *hr*, 39 weeks	
24	University of Michigan			N.		
25	University of Minnesota	Place apparently vacant	Mil. *r*			Applicants for admission must have been vaccinated, and be examined in Dalton's text-book.
26	University of Nashville State Normal College.	Professor Hammersly	S. G. will be used	Y.	Probably all	Applicants for admission, also for scholarship, must present health certificate.
27	National Deaf-Mute College	J. J. Chickering, B. A	L. G. and S. G. *r*	Y.		
28	College of New Jersey	George Goldie, supt. of gymnasium	H. G. *o* and L. G. *o*	Y.	Drill, 11 *t*, ½ *hr*, 28 weeks; L. G. 19 hours, weekly for 37 weeks; gymnastics.	Sept., 1884. Gymnastics req. 1st and 2d years, *m*, ½ *hr*, 4 *t*, weekly.
29	Ohio Wesleyan University	J. H. Grove, asst. prof. in Latin, tried to awaken an interest in military drill.	Mil. *o*	N.	Attendance *o* and occasional for 75 *m*.	
30	Pennsylvania College	None reported	None reported			
31	Smith College	Miss Luella Peck	L. G. and S. G. a little.	Y.	135 *r*, 149 *o*, 4 *t*, ½ *hr*, 18 weeks.	
32	Syracuse University					
33	University of Tennessee	Col. S. B. Crawford, commandant	Mil	N.	All students daily	
34	Texas State Agricultural College.	C. T. Crane, 1st lieut. U. S. A., a cadet officer assists.	Mil. *r*	N.	223 *m*, 3 *t*, 1 *hr*, 36 weeks	Has a college surgeon.
35	Tufts College	Department unorganized	S. G. probably			

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[1] 1882-'83.

[2] Somewhat.

TABLE NO. 18, PART III.—*Amount and character of the instruction, etc., in hygiene, in the principal colleges and universities of the United States*—Cont'd.

	Name of institution.	Name and title of head of the department. (*a* = has assistant.)	Style of drill adopted. (Mil. = military drill; S. G. = Sargent gymnastics; L. G. = light gymnastics.)	Keeps vital statistics. (Y = yes; N = no.)	Attendance on drill in 1882-'83; required unless otherwise stated.	Remarks.
36	U. S. Military Academy	Lieut. E. S. Farrow, U. S. A., Instructor	Mil.; mil. gym	Y.	G. required of all 1st-year men; mil. d. required of all cadets.	Swordsmanship and dancing are required exercises. Swimming is taught, too.
37	U. S. Naval Academy	M. Strohm, instructor in boxing, swimming and gymnastics; A. J. Corbeisier, sword-master, has 2 assistants.	Mil.; H. G	Y.	G. required of all 1st-year cadets, and drill of all cadets.	Swimming, dancing, fencing, and boxing are required exercises.
38	Vassar College	Miss A. Thurston, B. A., instr. in gym	S. G. ? *r*	Y.	All able-bodied students	Improvements contemplated.
39	Vanderbilt University	E. H. Bowser, director of gymnasium and instructor in physical exercise.	L. G. *o*	N.	*o* for all, 6 hours weekly	
40	Virginia State Agricultural College.	Prof. W. B. Preston	Mil. *r*	.....	180 *m*, 6 *t*, 1 *hr*, 42 weeks	Has a college surgeon.
41	Washington University	A. H. Mugge	L. G. *r* and *o*	N.	20 1st year, 17 2d year, *r*; 16 3d year, 10 4th year, *o*.	2 *t*, ½ *hr*, 38 weeks.
42	Wellesley College	Miss L. E. Hill, director of gymnasium	L. G. *r*, S. G. *r*	Y.	350 *f*, *r*, 50 *o*, 2 *t*, ¾ *hr*, 20 weeks.	Has several notable features.
43	Wesleyan University	Vacant	None	N.	....	
44	University of Wooster	A. C. Sharpe, A. B., 1st lieut. U. S. A.	Mil. *r*, L. G, 1883	N.	All males, 4½ hours weekly	
45	University of Wisconsin	G. W. Chase, 1st lieut. U. S. A., 1883-'84	Mil. *r*, L. G. *o*	N.	All *m*, 145 in 1882-'83; since 1874.	
46	Yale College	J. Seaver, B. A	L. G. *o*	N.	Freshmen, 2d term	Athletics in charge of a field director.

DR. BOWDITCH ON THE TEACHING OF HYGIENE.

In 1876 Dr. H. I. Bowditch, of Boston, Mass., delivered the Centennial Address before the International Medical Congress, in Philadelphia, on Public Hygiene in America. In the appendix to the volume in which the address is found, Dr. Bowditch gives summary statements setting forth the results of his correspondence with (*a*) sixty-two American universities and colleges, and with (*b*) twenty-three medical colleges, relative to the amount of instruction given by these institutions in public and private hygiene and physical culture. Under the first head Dr. Bowditch's conclusions are as follows:

(1) Instruction on public hygiene and state preventive medicine is wofully neglected.

(2) On private hygiene only about one-third of the colleges give any instruction.

(3) A full *special* course of instruction on either of the above themes is almost unknown.

(4) *Incidentally*, in connection with some other not necessarily allied subject, and therefore inefficiently, the topics are treated of by about three-fourths of the colleges, while one-fourth of them do not even perform this small duty in this most important matter. Meanwhile, although the instructors of the colleges thus neglect important duties, the youths, of their own free will, and at times lately with the aid and counsel of the college governments, have commenced athletic sports. This will gradually force the colleges to take, on their own parts, a higher position.

His conclusions under the second head, *i. e.*, as regards medical colleges, are—

(1) Only a little more than one-third of the colleges pay any attention to public or private hygiene.

(2) A still smaller proportion notice state preventive medicine.

(3) Only about one-fifth have special professors and special courses in hygiene.

(4) About one-half say they have subsidiary teaching given by various professors in other departments.

PRESENT TEACHING OF HYGIENE IN MEDICAL COLLEGES.

The Report of the Commissioner of Education for 1882–'83 enumerates eighty schools of medicine of the class known as "regular." About one-half of them, as shown in the following table, advertise to teach something of hygiene to candidates for their diplomas. An inspection of this and the preceding table affords evidence that there has been some slight improvement in the amount of attention given to hygiene in colleges and medical schools since Dr. Bowditch's investigation in 1876.

TABLE No. 19.—*Nature and amount of instruction in hygiene given in American medical schools for* 1882–'83.

Name of institution.	Location.	Name of teacher.	Title of teacher.
1. Medical Department, Arkansas Industrial University.	Little Rock, Ark	John J. McAlmont, M. D	Professor of materia medica, therapeutics, hygiene, and botany.
2. Medical Department, University of California	San Francisco, Cal	F. W. Hatch. A. M., M. D	Professor of hygiene.
3. Denver Medical College	Denver, Colo	None given.	
4. Southern Medical College	Atlanta, Ga	R. C. Wood, M. D	Professor of physiology and lecturer on hygiene.
5. Chicago Medical College	Chicago, Ill	O. C. De Wolf, A. M., M. D	Professor of State medicine and public hygiene.
6. College of Physicians and Surgeons	do	R. J. Curtis, M. D	Professor of State medicine and hygiene.
7. Rush Medical College	do	Norman Bridge, M. D	Professor of hygiene, adjunct professor of practice.
8. Woman's Medical College	do	B. W. Griffin, M. D	Lecturer on etiology and hygiene.
9. Quincy Medical College of Chicago	Quincy, Ill	C. B. Ellis, M. D	Professor of physiology and hygiene.
10. Medical College of Indiana	Indianapolis, Ind	W. B. Fletcher, M. D	Professor of physiology, hygiene, and clinical medicine.
11. Iowa College of Physicians and Surgeons	Des Moines, Iowa	L. C. Swift, M. D	Professor of physiology and clinical medicine, lecturer on hygiene.
12. College of Physicians and Surgeons	Keokuk, Iowa	A. G. Field, M. D	Professor of physiology, pathology, general therapeutics, and public hygiene.
13. Hospital College of Medicine	Louisville, Ky	J. J. Speed, M. D.	Professor of institutes of medicine and public hygiene, lecturer on insanity.
14. Medical Department, University of Louisville	do	T. S. Bell, M. D	Professor of State medicine and sanitary science.
15. Medical Department, University of Louisiana	New Orleans, La	J. B. Elliott, M. D	Professor of materia medica, therapeutics, and hygiene.
16. College of Physicians and Surgeons	Baltimore, Md	G. H. Rohé, M. D	Professor of hygiene and clinical dermatology.
17. Woman's Medical College of Baltimore	do	J. C. Thomas, M. D	Lecturer on hygiene.
18. College of Physicians and Surgeons	Boston, Mass	A. B. Morong, M. D	Professor of physiology and hygiene.
19. Michigan College of Medicine	Detroit, Mich	None given.	
20. Medical Department, Minnesota College Hospital	Minneapolis, Minn	H. J. Burnash, M. D	Professor of clinical medicine and hygiene.
21. Fort Wayne College of Medicine	Fort Wayne, Ind	J. H. Kellogg, M. D	Professor of sanitary science and hygiene.
22. Medical Department, University of Kansas City	Kansas City, Mo	C. W. Adams, M. D	Professor of diseases of children and hygiene.
23. Northwestern Medical College of Saint Joseph	Saint Joseph, Mo	F. A. Simmons, M. D	Professor of theory and practice of medicine and hygiene.
24. Saint Joseph Medical College	do	F. C. Hoyt, M. D	Demonstrator of anatomy and lecturer on hygiene.
25. Missouri Medical College	Saint Louis, Mo	J. S. Moore, M. D	Professor of principles of medicine and hygiene, materia medica, and therapeutics.
26. Saint Louis Medical College	do	W. E. Fischel, M. D	Professor of hygiene and forensic medicine.

27. Albany Medical College	Albany, N. Y	J. S. Mosher, PH.D., M. D	Professor of pathological practice and clinical medicine and hygiene.
28. Medical Department, University of Buffalo	Buffalo, N. Y	E. V. Stoddard, M. D	Professor of materia medica and hygiene.
29. Medical Department, Niagara University	do	None named.	
30. Bellevue Hospital Medical College[1]	New York City, N. Y		
31. College of Physicians and Surgeons	do	J. C. Dalton, M. D	Professor of physiology and hygiene.
32. Woman's Medical College of New York Infirmary	do	E. H. James, M. D Elizabeth Blackwell, M. D	Professor of hygiene. Emeritus professor of hygiene.
33. College of Medicine, Syracuse University	Syracuse, N. Y	N. Nivison, M. D	Professor of physiology, pathology, and hygiene.
34. Medical Department, Willamette University	Portland, Oreg	H. Carpenter, M. D	Professor of hygiene.
35. Medical Department, Western Reserve University	Cleveland, Ohio	H. J. Herrick, A. M., M. D	Professor of pathology, State medicine, and hygiene.
36. Columbus Medical College	Columbus, Ohio	None named.[2]	
37. Medico-Chirurgical College of Philadelphia	Philadelphia, Pa	C. S. Mitchell, PH. D., M. D	Professor of chemistry and sanitary science.
38. Woman's Medical College of Pennsylvania	do	Frances Emily White, M. D	Professor of physiology and hygiene.
39. Nashville Medical College	Nashville, Tenn	W. P. Jones, M. D	Professor of insanity and mental hygiene.
40. Medical Departmen , Georgetown University	Georgetown, D. C	None named.[3]	
41. Medical Department, Howard University	Washington, D. C	G. S. Palmer, M. D	Professor of physiology and hygiene.

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[1] "The subject of public hygiene has been assigned to Professor Janeway, Associate Professor of Principles and Practice of Medicine."

[2] But it is stated that the professor of diseases of children will lecture on hygiene.

[3] Till 1884-'85 M. G. Ellzey was their professor of chemistry and State medicine.

TABLE No. 19.—*Nature and amount of instruction in hygiene given in American medical schools for* 1882-'83—Continued.

Name of institution.	Taught by means of—	Time devoted to hygiene.	Requirements.	Remarks.	Books recommended.
1. Medical Department, Arkansas Industrial University.	Lectures	Not specified	None		None.
2. Medical Department, University of California	do (?)	Third year of study	do	Hygiene and medical chemistry	do.
3. Denver Medical College	do (?)	Second year of study	do		do.
4. Southern Medical College	do		do	No other mention.	
5. Chicago Medical College	do (?)	Second year of study	do		do.
6. College of Physicians and Surgeons	do (?)	Third year of study	do		do.
7. Rush Medical College	do	Spring term	do		Buck; Parkes.
8. Woman's Medical College	do (?)			do	None.
9. Quincy Medical College of Chicago	do (?)	Not specified	do		do.
10. Medical College of Indiana	do (?)	do	do		Parkes.
11. Iowa College of Physicians and Surgeons	do	do	do		None.
12. College of Physicians and Surgeons	do	do	do	General principles	do.
13. Hospital College of Medicine	do	do	do	No other mention	do.
14. Medical Department, University of Louisville	do	do	do	do	do.
15. Medical Department, University of Louisiana	do	One lecture weekly	Examination required (?)	Special attention called to it	Wilson; Parkes.
16. College of Physicians and Surgeons	do	Second year	Recommended in graduating course.		None.
17. Woman's Medical College of Baltimore	do	In spring course	Required in graduating course only.		do.
18. College of Physicians and Surgeons				No other mention	do.
19. Michigan College of Medicine	do (?)	Third year of study	Required for degree (?)		do.
20. Medical Department, Minnesota College Hospital.	do	Not specified			Parkes; Wilson; Rolen.
21. Fort Wayne College of Medicine		do		Rejected by American Medical College Association.	
22. Medical Department, University of Kansas City	do	do			Buck; Sanders.
23. Northwestern Medical College of Saint Joseph				No other mention	None.
24. Saint Joseph Medical College	do	do		do	do.
25. Missouri Medical College		do		"Hygiene and dietetics practically considered."	do.

26. Saint Louis Medical College	do	Two lectures weekly; one-half term.			Wilson.
27. Albany Medical College	do	Not specified			Bartholow.
28. Medical Department, University of Buffalo	do			Personal and municipal hygiene attended to.	None.
29. Medical Department, Niagara University		Therapeutics and hygiene, second year.		No other mention	do.
30. Bellevue Hospital Medical College					
31. College of Physicians and Surgeons	do			do.	
32. Woman's Medical College of New York Infirmary.	do	Second year of study	Required for final examination.		Wilson; Parkes; Mapother.
33. College of Medicine, Syracuse University	do	Not specified		do	None.
34. Medical Department, Willamette University	do	do			Parkes; Bowditch.
35. Medical Department, Western Reserve University.	do	Two lectures weekly			Wilson; Buck.
37. Medico-Chirurgical College of Philadelphia	do	Third year of study		Personal hygiene in preliminary course.	
28. Woman's Medical College of Pennsylvania				1883-'84	Wilson.
39. Nashville Medical College				Nothing mentioned, 1883-'84.	
40. Medical Department, Georgetown University		Second and third year studies.	Examination required second year.		Richardson's Preventive Medicine.
41. Medical Department, Howard University			In course		Parkes.

The foregoing table is compiled from as complete a set of catalogues of medical schools as was accessible to the compiler of this Report. It appears, however, from the conspectus of the medical schools of America, including those of Canada, published by the Illinois State Board of Health, received as we go to press, that in 1882–'83 there were 42 American medical schools having "chairs" of hygiene. Of these, 32 were regular, 7 homeopathic, and 3 eclectic. In 1883–'84 the number had increased to 80, of which 63 were regular, 8 homeopathic, 7 eclectic, and 2 physio-medical. So large an increase in "chairs of hygiene" is surprising. If they are indeed "chairs," and not stools, it is encouraging as well. We are inclined to suspect that many of them have been manufactured to order, on account of the action of the Illinois State Board of Health, whose schedule of minimum requirements, adopted in 1880 as its standard for determining the status of medical colleges under the Medical Practice Act of that State, took effect at the close of the lecture sessions of 1882–'83. Of the ten branches of medical science included in that schedule, hygiene is one, being placed ninth on the list.

THE STUDY OF HYGIENE IN SECONDARY SCHOOLS.

Elementary physiology, or, as it is usually entitled, "anatomy, physiology, and hygiene," is very generally given a place in the courses of study laid down for high schools, academies, and normal schools. If we were to base an opinion simply on the statements of catalogues and schedules, we might believe that hygiene, under the name of physiology, received ample attention in our secondary schools. But if any one who knows the difference between modern and mediæval notions regarding the nature and needs of the human body will glance at the text-books used, and inform himself as to the antiquated and unreal methods of instruction, he will cease to wonder at the unsatisfactory results thus far attained in attempting to teach the laws of health. It would be difficult to devise more unscientific and unnatural educational methods and practices than those which obtain in a very large proportion of the medical schools of the country. When medical men are so generally trained after vicious methods and amid unsanitary surroundings, it is too much to expect that the ordinary school committee-man and the average teacher will be anxious or able to work intelligently and successfully for the natural and healthy mental and bodily development of those intrusted to their charge. Of the 119 normal schools classed as public in the Report of the Commissioner of Education, at least 75, in 1882, specify physiology and hygiene in their courses of study. Less than one-quarter of them require gymnastics of their pupils.

REFORMS NEEDED.

The principles of hygiene—and hygiene is simply applied physiology—cannot be clearly and intelligently taught, much less authoritatively enforced, either in superior or secondary schools, so long as the main dependence of teachers is upon lesson cramming from text-books burdened with antiquated statements and exploded hypotheses. But much more is demanded in the domain of school and college hygiene, using the term broadly, than would be embraced in simply reforming methods of instruction. There is the additional need, not only of sanitary inspection and regulation of schools and scholars, but also of a thorough overhauling and general disinfection of the courses of instruction and of the rules and regulations for the conduct and control of teachers and taught. It is within the mark to say that the majority of our educational schemes and practices, especially in the field of female education, are not in harmony with the laws and facts of modern physiology and psychology. The need of such harmony is beginning to be apprehended. To bring about a clear and general recognition of its need, not to speak of its realization, will require a vast amount of patient and skilled labor on the part of the growing band of writers and workers who are concerning themselves alike about the physical and the mental well-being of the student class.

OPINION OF PROFESSOR HUXLEY ON ELEMENTARY INSTRUCTION IN PHYSIOLOGY.

The following opinion expressed by Professor Huxley, in an address on "Elementary Instruction in Physiology," seems pertinent and weighty in this connection:

> It is, I think, eminently desirable that the hygienist and the physician should find something in the public mind to which they can appeal; some little stock of universally acknowledged truths, which may serve as a foundation for their warnings, and predispose toward an intelligent obedience to their recommendations.
>
> Listening to ordinary talk about health, disease, and death, one is often led to entertain a doubt whether the speakers believe that the course of natural causation runs as smoothly in the human body as elsewhere.
>
> Hence, I think, arises the want of heartiness of belief in the value of knowledge respecting the laws of health and disease, and of the foresight and care to which knowledge is the essential preliminary, which is so often noticeable, and a corresponding laxity and carelessness in practice, the results of which are too frequently lamentable.
>
> I am not sure that the feeling expressed in the doctrine that all disease is brought about by the direct and special interference of the Deity does not lie at the bottom of the minds of a great many people who yet would vigorously object to give a verbal assent to the doctrine itself. However this may be, the main point is, that sufficient knowledge has now been acquired of vital phenomena to justify the assertion that the notion that there is anything exceptional about these phenomena receives not a particle of support from any known fact. On the contrary, there is a vast and increasing mass of evidence that birth and death, health and disease, are as much parts of the ordinary stream of events as the rising and setting of the sun, or the changes of the moon; and that the living body is a mechanism, the proper working of which we deem health; its disturbance, disease; its stoppage, death. The activity of this mechanism is dependent upon many and complicated conditions, some of which are hopelessly beyond our control, while others are readily accessible, and are capable of being indefinitely modified by our own actions. The business of the hygienist and of the physician is to know the range of these modifiable conditions, and how to influ-

ence them toward the maintenance of health and the prolongation of life; and the business of the general public is to give an intelligent assent and a ready obedience, based upon that assent, to the rules laid down for their guidance by such experts. But an intelligent assent is an assent based upon knowledge, and the knowledge here in question means an acquaintance with the elements of physiology.

From our point of view it is quite as necessary, though in a different degree, for the educator, as for the hygienist and the physician, "to know the range of these modifiable conditions" to which Professor Huxley alludes. Those who contemn or ignore the knowledge of such conditions and the means of influencing them, contemn or ignore that fundamental attribute of human nature which renders man capable of self-improvement and perfectibility through the exercise and training of his faculties. We may, and too often do, lose sight of the interdependence of the mind and body; but none the less is it impossible to separate the two and train either independently of the other; for, as was well said by Sterne, "The body and mind are like a jerkin and its lining. If you rumple the one you rumple the other."

CONCLUDING REMARKS AND SUGGESTIONS.

OUTLOOK FOR THE FUTURE.

We have now considered the peculiar features of the origin and development in American schools and colleges of physical training in its three principal branches, viz., gymnastics, military drill, and athletics, and have endeavored to indicate the nature and extent of the instruction undertaken in the science of personal hygiene. The present condition of affairs is such as to lead us to hope for even better results than those attained within the last twenty-five years. College authorities and patrons are very generally awake, or are awakening, to the necessity of providing better instruction and facilities for the physical training of the youth of either sex. With a very few, but very marked, exceptions, however, our colleges have not emerged from that stage of development in which the needs of physical training are supposed to be met by the construction and furnishing of a fine gymnasium building. Even in such institutions as have placed their gymnasia and their gymnastics under the charge of a medical director, only a beginning has been effected toward organizing the department on a broad, scientific, and thoroughly educational basis. It is a good thing to have taken the control of college gymnasia out of the hands of ignorant and low-toned trainers and athletes. Laudable results have already been brought to pass through putting the department of physical education into the hands of educated medical men. But a much more liberal outlay of imagination and money than has yet been expended in any of our colleges is indispensable to render such departments thoroughly and efficiently adequate to the demands that may fairly be made upon them.

QUALIFICATIONS OF A DIRECTOR OF A COLLEGE GYMNASIUM.

The director of a college gymnasium should possess sufficient academic and professional training to entitle him to a place in the Faculty, and to insure him the respect of his colleagues. The supply to meet even the present demand for such men is not large. The director's duties should be mainly those of a friendly medical, or rather hygienic, adviser of young men in regard to their habits of study, exercise, and recreation. He should be expected to make a close study of the bodily and mental peculiarities of those under his charge, not only for the purpose of diagnosis in individual cases, but also for the purpose of contributing the results of his observations toward the determination of the physical and mental constants of the student class. The director should have a sufficient staff of assistants subject to his orders to provide safe and graded instruction in the principal gymnastic and athletic specialties. It should be within the director's province to forbid men to take part in contests and exhibitions, when, in his judgment, on account of insufficient or improper training, or because of structural or functional weakness, such participation would be likely to prove injurious. He should also, by lectures or otherwise, give regular and genuine instruction in personal hygiene.

PROPOSED SCHEME FOR ORGANIZING A COLLEGE DEPARTMENT OF PERSONAL HYGIENE AND PHYSICAL TRAINING.

The following may serve to indicate what, in the opinion of the writer, should be the ends aimed at in the establishment and maintenance by a college or university, whether for men or women, of a department of personal hygiene and physical training.

Three special ends are to be subserved in such a department:

Firstly, The instruction of students in the laws of health, such instruction to be based upon an exposition of the modern doctrine of the human body.

Secondly, The guidance of students in a systematic attempt to attain sound bodies and vigorous normal functions by means of gymnastic exercise, the use of developing appliances, and the non-abuse of athletic sports and scholastic work, such guidance being based upon a careful examination into and study of the bodily endowments, constitutional peculiarities, and mental habits of the individuals under guidance. The counsel and direction of the director should be seconded by the instruction of special teachers in the principal branches of gymnastics and athletics, such teachers to be subject to his control and supervision.

Thirdly, The scientific study of the natural history of the student class.

Toward the furtherance of these ends a well-equipped gymnasium and ample and conveniently-arranged play-grounds are indispensable, and the director should be expected to give—

(I) Instruction (*a*) by means of lectures; (*b*) by marking out a course of reading; (*c*) by anatomical and physical demonstrations; (*d*) by holding examinations. Undergraduate students should be required and other students allowed to attend such instruction.

The lectures might be grouped advantageously as follows: (1) on the nature and needs of the human body, in connection with demonstrations (*a*) on the skeleton, (*b*) with anatomical preparations, and (*c*) by means of physiological apparatus; (2) on the theory and practice of exercise and training; (3) on selected topics in public and personal hygiene; (4) on the aims and means of modern medicine, with hints as to the selection of medical advisers.

(II) Guidance, by means of personal suggestions, advice, and direction. Each undergraduate student should be required, and all others encouraged, to undergo a physical examination by the director, in order that he may be enabled to prescribe such exercises and the use of such developing appliances and measures as may be appropriate to the special needs of each individual. Each student should be examined at least twice a year, and the results of such examinations should be carefully recorded and tabulated.

(III) By making statistical and scientific reports of observations and experiments. The director should record, analyze, and discuss the results of his observations, measurements, and examinations; and be encouraged to investigate the problems appertaining to the development and maintenance of normal bodily and mental functions in members of the student class, to the end that physical education may be put upon a rational basis.

It is only through a wise combination of gymnastic training and athletic sports that the best results can be hoped for or attained. Athletic sports can, if wisely managed and supervised, be made most serviceable in securing manliness and self-control to those engaging in them. The abandonment of them as a general "elective course" to the unregulated control of unripe and inexperienced youth is, to say the least, unwise. He who shall consider intelligently and critically, in the light of our present knowledge of brain and nerve and muscle physiology, the various games and sports which are deservedly popular, and shall show wherein they are valuable as a means to manly and womanly development, cannot fail of contributing greatly to the advancement of pedagogical science.

So dense is the present ignorance, not only of the mass of the people, but also of a large section of the educated portion of the community, concerning the elementary truths of biological science in general and of psycho-physical science in particular, that it would be well-nigh hopeless to attempt to institute and administer any thorough-going system of physical training as a part of the system of public instruction in even the most enlightened States of the Union. Until the modern doctrine of bodily exercise is more generally apprehended, we can only look for sporadic efforts and fragmentary and discordant results in so much of the field of physical training as the richer and more advanced colleges and universities may occupy. The German, Swedish, and French systems of physical training and of educating teachers in gymnastics are well worth studying; but the greatest present need is to educate trustees, committee-men, teachers, and physicians in physiology and hygiene.

DU BOIS-REYMOND ON EXERCISE.

One of the pioneers and masters in modern physiology, Professor Du Bois-Reymond, of the University of Berlin, has given an admirable statement of the physiology of exercise. He says:

> By exercise we commonly understand the frequent repetition of a more or less complicated action of the body with the co-operation of the mind, or of an action of the mind alone, for the purpose of being able to perform it better. We seek in vain in most physiological text-books for instruction respecting exercise; if it is given, only the so-called bodily exercises are generally considered, and they are represented as merely exercises of the muscular system; therefore, it is not strange that laymen in medicine, professors of gymnastics, and school teachers, generally believe that. Yet it is easy to show the error of this view and demonstrate that such bodily exercises as gymnastics, fencing, swimming, riding, dancing, and skating are much more exercises of the central nervous system—of the brain and spinal marrow. It is true that these movements involve a certain degree of muscular power; but we can conceive of a man with muscles like those of the Farnesian Hercules, who would yet be incompetent to stand or walk, to say nothing of his exerting more complicated movements.
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> Thus it becomes clear, if proof were needed, that every action of our body as a motive apparatus depends not less, but more, upon the co-operation of the muscles than upon the force of their contraction. In order to execute a composite motion, like a leap, the muscles must begin to work in the proper order, and the energy of each one of them (in Helmholtz's sense) must increase, halt, and diminish according to a certain law, so that the result shall be the proper position of the limbs and the proper velocity of the center of gravity in the proper direction. Since the nerves only transmit the impulses coming from the motor-ganglion cells, it is evident that the peculiar mechanism of the composite movements resides in the central nervous system, and that consequently exercise in such movements is really nothing else than exercise of the central nerve-system. This possesses the invaluable property that the series of movements, if we may speak thus, which take place in it, frequently, after a definite law, are readily repeated in the same order, with the same swell and ebb and intricacy, whenever a singly felt impulse of the will demands it. Thus all the bodily exercises we have mentioned above are not merely muscle gymnastics, but also, and that pre-eminently, nerve gymnastics, if for brevity we may apply the term nerves to the whole nervous system.
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> Still, something else than the control of the muscles by the motor-nervous system comes into consideration in most composite movements. The sight, the sense of pressure, and the muscular sense, and finally the mind, must be prepared to take in the position of the body at each instant, so that the muscles may be in a proper state of adjustment; this is plainly shown in the exercises of fencing, playing billiards, rope-dancing, vaulting on horses in motion, or leaping down a mountain slope. Thus not only the motor, but the sensor nervous system also, and the mental functions, are capable of being exercised, and need it; and the muscles again appear to acquire a deeper

importance in gymnastics. What is said here of the coarser bodily movements applies equally to all skilled work of the highest as well as of the lowest kind. Although a Liszt or a Rubinstein without an iron muscularity of arm cannot be thought of, and although, likewise, the movements of Joachim's bow during a symphony may correspond to many kilogram-meters, still their power as virtuosos resides in their central nerve-system. When Lessing asked whether Raphael would have been any the less a great painter if he had been born without hands, he perceived this truth. Is it necessary to add that the same principle applies to all the movements as well as to those of the hands? that, for example, vocal culture rests upon no other one?

The modern ideal of manly excellence is more nearly related to the Greek ideal than to the monkish or even the knightly. When modern methods for the realization of the modern ideal are perfected, they will doubtless as far surpass the methods of the Greeks as the physiology of Du Bois-Reymond surpasses that of Plato. Meanwhile, the true end and aim of physical training in America is the same that Plato enunciated, namely, that the bodies of the trained may, better than those of the untrained, minister to the virtuous mind.

And once more [to continue in Plato's words], when a body large and too strong for the soul is united to a small and weak intelligence, then, inasmuch as there are two desires natural to man, one of food for the sake of the body, and one of wisdom for the sake of the diviner part of us, then, I say, the motions of the stronger, getting the better and increasing their own power, but making the soul dull and stupid and forgetful, engender ignorance, which is the greatest of diseases. There is one protection against both kinds of disproportion,—that we should not move the body without the soul, or the soul without the body, and thus they will aid one another and be healthy and well balanced. And therefore the mathematician, or any one else who devotes himself to some intellectual pursuit, must allow his body to have motion also, and practice gymnastics; and he who would train the limbs of the body should impart to them the motions of the soul, and should practice music and all philosophy, if he would be called truly fair and truly good.

APPENDIX.

PHYSICAL TRAINING IN GERMANY.

Physical training has been accorded a considerable place in the educational systems of the principal countries of Europe, including Germany, Sweden and Norway, Switzerland, France, Austria, Belgium, and Denmark. It would be interesting and instructive to compare the systems of physical training now in vogue in these countries with what has been attempted and accomplished in Great Britain and the United States. The writer originally intended to embody such a comparison in this report, but found it impossible to gather, from the libraries to which he had access, sufficient data on which to base a comprehensive and accurate account of the actual working of physical education in any of the foreign countries named above.

Since the foregoing pages were prepared for publication, the writer has visited Germany, and, through personal observation and inquiry, made a tolerably comprehensive study of German methods of physical training, especially of those which obtain in Prussia. While he would not disparage the merits of the gymnastic training given in the schools of Sweden, Switzerland, and France, and of other countries which he was likewise unable to visit, the writer inclines to the opinion that the Prussian system is the most highly developed and the best organized of its kind, and is, therefore, more worthy than any other of close study on the part of those who desire to check the present tendency to brain-forcing in the education of American youth.

DEVELOPMENT OF GERMAN GYMNASTICS.

English and American writers on education have very generally either entirely neglected, or largely failed to apprehend, the lessons which German experience teaches in regard to physical education.

The German for gymnastics is *Turnkunst*, or *Turnen*, though the term *Gymnastik* occurs not infrequently, especially in the earlier writings. *Turnplatz* and *Turnhalle* correspond respectively to our terms out-door gymnasium and gymnasium, which latter ordinarily signifies a building for gymnastic exercises. A gymnasium, in the German sense, is the highest of the secondary schools, and leads directly to the university. The uniform use of this term to designate such schools dates, in Prussia, from the year 1812.

German gymnastics embrace three well-marked fields, or departments, viz: *Volksturnen*, or popular gymnastics; *Schulturnen*, or school gymnastics; and *Militärturnen*, or military gymnastics. The organization of the last two departments is maintained and controlled by the Government for strictly educational purposes; whereas the *Turnvereine*, as the societies of the turners are called, are voluntary associations of a social and semi-educational, but wholly popular and patriotic, nature. The fondness of the German people for gymnastic exercises is as marked a national trait as is the liking of the British for athletic sports. The germ of the turning system is to be found in the martial games and exercises of the ancient Teutons.

Considered from an educational point of view, British athletics are rude and primitive when compared with German gymnastics, which, in many of their features, are almost Grecian. The two systems are as widely different in their aims and methods as are the British school-boy and the German school-master, and for the same reasons.

GERMAN REFORMS AND REFORMERS.

The reform whereby mental and physical training have been made conjoint factors in the compulsory education of every German, has been worked out during the last hundred years. At every stage of its course the quickening and shaping influence of innovating educators has been felt. The three most eminent names in the list of men identified with the revival and upbuilding of German gymnastics are those of Guts Muths, Jahn, and Spiess. Each was a teacher and writer. Jahn was an agitator and popular leader in addition. Guts Muths lived from 1759 till 1839, Jahn from 1778 till 1852, and Spiess from 1810 till 1858.

GUTS MUTHS AND HIS WORK.

Guts Muths was teacher of gymnastics in Salzmann's Philanthropinum, at Schnepfenthal, from 1787 till his death, in 1839. His "*Gymnastik für die Jugend*," published in 1793, was the first German manual of gymnastics. He did much by his writings and labors to prepare the way for Jahn, the "Father of turning," and Spiess, the "Founder of German school gymnastics and the creator of gymnastics for girls." Guts Muths's success at Schnepfenthal led many private and a few public teachers to attempt to give their pupils some gymnastic training. The influence of Guts Muths is also traceable in the revival of gymnastics in Denmark, under the lead of Nachtigall, and in Sweden, where Ling, the founder of modern medical gymnastics, made gymnastics extremely popular. It should not be forgotten that Ling did much more than to develop the Swedish movement cure, on which his fame outside of his own country chiefly rests. He organized admirable systems of popular and school gymnastics, which are still extant and flourishing.

REFORMS IN PRUSSIA.

Prussia's commanding position in science and politics is due to the perfection of her educational and military systems. Their present excellence and efficiency are, in a large degree, the outcome of reforms begun by the sagacious and energetic ministers of the father of Kaiser Wilhelm, in the period of Prussia's deepest humiliation and distress, the period between the battle of Jena, in 1806, and the War of Liberation, in 1813. Bismarck and his coadjutors, Roon, Moltke, and Falk, have but cultivated the seed and reaped the fruits of the reforms instituted or marked out by Stein, and Scharnhorst, and Wilhelm von Humboldt.

Stein emancipated the peasants from serfdom, broke down the barriers between them and the middle classes, and gave enlarged freedom to trade. His name is also associated with radical and successful reforms in the constitution and administration of the State. Scharnhorst reorganized the army in accordance with the principle that all the inhabitants of a country should be trained to defend it. "In the field of educational reform the providential man," says Professor Seeley, "appeared in Humboldt, as great a master of the science and art of education as Scharnhorst was of war."

As early as 1804, Guts Muths urged upon the Prussian minister, Massow, the importance of introducing physical education into the schools as a means of promoting the military efficiency of the people. The minister replied that he proposed to make bodily training an essential part of his plan for national education. The war with Napoleon prevented this reform from being more than projected. In 1808 Scharnhorst's provisional scheme for the reorganization of the army was submitted to Stein for criticism and suggestions. Scharnhorst urged that fencing, swimming, leaping, etc., should be taught in the town and city schools. Stein approved the views of Scharnhorst in regard to bodily exercises, called attention to the success of Guts Muths at Schnepfenthal, and suggested the desirability of securing his co-operation in bringing about the general introduction of gymnastics into the schools. Humboldt likewise favored the scheme, but no efficient measures were taken, at this time, to carry it out. The first public gymnastic ground (*Turnplatz*) was established in the summer of 1809 at Braunsberg, in Prussia, under the auspices of a secret association formed under the name of "The Moral and Scientific Union," the so-called *Tugendbund*, for the purpose of arousing national feeling and throwing off the French yoke. The gymnastics adopted at Braunsberg seem to have been based on the principles of Guts Muths.

"FATHER JAHN" AND THE TURNERS.

That gymnastics under the name of *Turnen* became a popular institution and a potent factor in national development, was due to Jahn, a man of much more aggressive spirit than the quiet teacher of gymnastics at Schnepfenthal. In 1810 Jahn became a teacher in the *Köllnisches Gymnasium*, one of the city schools in Berlin, and in 1811–'12 he also taught in Plamann's Pestalozzian Institute in the same city. Prince Bismarck was a pupil in this institute from 1822 till 1827.

Jahn was an ardent patriot, and was filled with an enthusiastic admiration of the spirit, manners, and speech of the ancient Germans. His strong and rugged nature, and his eager, restless, passionate spirit, qualified him for popular leadership in the movement which he initiated. He seized the idea of making bodily training a force in national regeneration and education, and dreamed and wrote and labored for a free and united Germany. Before he had fairly entered upon his course as a teacher in Berlin, his book on "German Nationality" appeared in 1810. In the interval which elapsed between 1810 and 1816, the date of "*Die Deutsche Turnkunst*," he accomplished the main labor of his life. The nature of his work, the ideas by which he was animated, and the circumstances of the time which favored his success, are indicated in the following extracts from "*Die Deutsche Turnkunst*":

> Like many other things in this world, the German turning system had a small and insignificant beginning. In the end of the year 1809 I went to Berlin to see the entry of the King. Love to my fatherland and my own inclinations now made me a teacher of youth, as I had often been before. During the beautiful spring of 1810 a few of my pupils began to go out with me into the woods and fields on the holiday afternoons of Wednesday and Saturday, and the habit became confirmed. Their number increased, and we had various youthful sports and exercises. Thus we went on until the dog-days, when the number was very large, but very soon fell off again. But there was left a select number, a nucleus, who held together even during the winter, with whom the first turning ground was opened in the spring of 1811, in the Hasenheide [*i. e.*, a pine forest on the outskirts of Berlin].
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> At the present time many exercises are practiced in company and before the eyes of all, under the name of turning. But then the names turning system, turning, turner, turning ground, and the like, came up all at once, and gave occasion for much excitement, scandal, and authorship. The subject was discussed even in the French daily papers, and even here in our own country it was at first said that the ancient German ways have brought forth a new folly.
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> During the winter we studied whatever could be got on the subject, and we reflected with gratitude upon our predecessors, Vieth and Guts Muths. The stronger and more experienced of my pupils made a very skillful use of their writings, and were able, during the next summer, to labor as instructors in turning. In the summer of 1812 both the turning ground and system of exercises were enlarged. They became more varied from turning day to turning day, and were mutually developed by the pupils in their friendly contests of youthful emulation. It is impossible to say in detail who first discovered, tried, investigated, proved, and completed one or another exercise. From the very beginning the turning system has shown great community of spirit, patriotic feeling, perseverance, and self-denial. Every extension or development of it was used for the common good, and such is still the case.
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> Toward the end of the summer exercises of 1812, a sort of association of turners was formed for the purpose of the scientific investigation and artistic organization of the turning system in the most useful and generally applicable manner. On the King's proclamation of February 3, 1813, all the turners capable of bearing arms entered the field. After long persuasion I succeeded at Breslau in inducing Ernst Eiselen, one of my oldest pupils, to take charge of the turning institution during the war. I myself accompanied Eiselen from Breslau to Berlin, and introduced him to the authorities and to the principals of schools, who promised him all manner of co-operation, and who have ever since shown confidence in him. Since that time Eiselen has been at

the head of the turning institution, during the summers of 1813 and 1814 and the intervening winter, and has conducted the exercises of those who were too young to carry arms.

At the end of July, 1814, I returned to Berlin. In the winter, when the volunteers returned, bringing many turners with them, the associated discussions were renewed. On the escape of Napoleon all the turners able to bear arms volunteered again for the field, only two who had fought during the campaigns of 1813 and 1814 remaining at home from the consequences of those campaigns.

The younger ones who remained behind now took hold of the work again with renewed zeal. During the spring and summer of 1815 the turning ground received still further improvements and enlargements. In the following autumn and early part of winter, the turning system was again made the object of associated investigation. After the subject had been ripely considered and investigated in the turning council, and opinions had been compared, experience cited and views corrected, a beginning was made in collecting into one whole all the results of earlier and later labors on the subject, and all the separate fragments and contributions relative to it, a labor which has lastly been revised by my own pen. Although it was only one architect who at first drew the plan, yet master, associates, pupils, and workmen have all labored faithfully and honestly upon the structure, and have all contributed their shares to it.

This is a brief account of my work, my words, and my book. Neither of the three is perfect; but the book may serve to promote a recognition of its ideal. It is put forth only by way of rendering an account to the fatherland of what we have done and endeavored.

The turning system would re-establish the lost symmetry of human development; would connect a proper bodily training with mere exclusive intellectual cultivation; would supply the proper counteracting influence to the prevailing over-refinement, and would comprehend and influence the whole man by means of a social mode of living for the young. Every turning institution is a place for exercising the bodily powers, a school of industry in manly activity, a place of chivalrous contest, an aid to education, a protection to the health, and a public benefit. It is constantly and interchangeably a place of teaching and of learning. In an unbroken circle follow constantly after each other, direction, exemplification, instruction, independent investigation, practice, emulation, and further instruction. Thus the turners do not learn their occupation from hearsay. They have lived in and with their work, investigated it, proved it, and perfected it. It awakens all the dormant powers and secures a self-confidence and readiness which are never found at a loss.

The director of a turning institution undertakes a high duty. He must cherish and protect the simplicity of the young, that it may not be injured by untimely precocity. He who is not thoroughly penetrated with a childlike spirit and national feelings, should never take charge of a turning institution. It is a holy work and life.

But all education is useless and idle which leaves the pupil to disappear, like a will-o'-the-wisp, in the waste folly of a fancied cosmopolitanism, and does not confirm him in patriotic feeling; and thus, even in the worst period of the French domination, love of king and fatherland were preached to and impressed upon the youth of the turning association. No one ought to enter a turning association who is knowingly a perverter of German nationality, and praises, loves, promotes, or defends foreign manners.

With such principles did the turning societies strengthen, train, arm, encourage, and man themselves for the fatherland, in the sultry times of the devil. Nor did faith, love, or hope desert them for a moment. "God deserts no German," has always been their motto. In war none of them staid at home, except those too young or too weak, and they were not idle.

The turning system [says Von Raumer] soon spread from Berlin throughout Germany, and a large part of Southern Germany. Next to Berlin, Breslau had the largest number of turners, some eight hundred. In that city students, Catholic and Protestant, seminary pupils, the pupils of four *Gymnasien*, officers, and professors frequented the turning ground. Singing flourished. On Wednesday and Saturday afternoons, after exercising from three to seven, the whole company returned singing to the city.

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Together with this first natural development of the turning system, there came up also a reaction against many received and universal customs and manners. This necessarily aroused enemies, and the more because the turners frequently overpassed the bounds of moderation, and made turning identical with a warfare against all ancient errors. This was particularly the case after the war of freedom.

THE ATTITUDE OF THE STATE AUTHORITIES.

The state authorities, especially those at the head of the department of education, seem to have manifested a lively and, on the whole, friendly interest in Jahn and his work. In 1813, during Jahn's absence in the field, six hundred and seventy thalers were appropriated to enable Eiselen to conduct an eight weeks' normal course of instruction for teachers of turning, but it was impracticable to carry out the plan at that time. Several reports of a favorable nature were made to the Government on the pedagogical and hygienic worth of turning, and turning grounds were established in various parts of the Kingdom under governmental auspices. In 1814 the Prussian chancellor, Prince Hardenberg, bestowed a pension of five hundred thalers upon Jahn, in recognition of his services to the state. In September, 1815, Jahn's pension was increased to eight hundred thalers, and Eiselen was granted a salary of four hundred thalers. This was due to a report made to Hardenberg in April, 1815, by Minister Von Schuckmann, to whom Hardenberg had referred a plan of Jahn's for enlarging the turnplatz, purchasing certain buildings, and bringing the turning institution into close connection with the Berlin school-system. Von Schuckmann was averse, by reason of the low state of the treasury, to incurring the large expenditures suggested by Jahn, and deemed it unadvisable to introduce turning formally into the schools, lest it should lose its spontaneous popular character.

In 1818 Altenstein, the minister of education, caused an official investigation to be made into the nature, extent, and effects of turning throughout Prussia. During the period 1816–'19, the department of education elaborated a provisional scheme for a general education law, which, however, was never enacted in its entirety. In this scheme a place was assigned to gymnastics, and it was proposed to introduce them into the rural schools as well as into the middle schools, normal schools, and Gymnasien.

At last, in 1819, a plan was perfected by the educational authorities for the establishment of turning grounds thoughout Prussia in connection with the schools. On March 23, 1819, the very day that this plan was laid before the King for his approval and signature, the news of Kotzebue's murder by Sand, who was a student and a turner, reached Berlin, and the King refused his approval. Sand's deed of crazy violence had, as it appears now, no political significance; but the Prussian Government feared revolution, and looked upon the spread of liberal ideas among the rising generation with alarm. The *Burschenschaften*, or students' societies, and the *Turnvereine* were put under the ban as being hotbeds of liberalism. Jahn was arrested in July, 1819, on the charge of engaging in revolutionary practices and conspiring to assassinate a privy councilor, Von Kamptz by name. Francis Lieber, then a youth of nineteen, one of Jahn's oldest and favorite pupils, was also arrested on suspicion. Lieber regained his freedom in a few months, but was forbidden to study at a Prussian university. Jahn was acquitted and set free in 1825, but was banished from Berlin, and forbidden to reside in any town where there was a university or Gymnasium. Francis Lieber came to the United States in 1827 for the express purpose of taking charge of the then recently founded Tremont Gymnasium, in Boston, Mass., where he established a swimming school on his own account.

In January, 1820, the Government abolished turning in Prussia by closing the turning grounds, some ninety in number. Volksturnen was not again allowed until 1842. Gradually gymnastics found a place in the instruction of a few schools. In 1836, Dr. Lorinser, of Oppeln, published in a medical journal an article entitled "The Protection of Health in Schools." Dr. Lorinser was very severe in his strictures on the management of the schools, especially of the Gymnasien. He declared that bodily and mental weakness were on the increase among school children, and especially the Gymnasium pupils, by reason of the overburdening due to multiplicity of studies, too many school hours, and an undue amount of home work. This paper gave rise to a wide and somewhat heated discussion, and indirectly brought about a renewed interest in school gymnastics.

In 1840 the department of education recommended the introduction of bodily training into all the higher schools for boys. In April, 1842, the ministers of war, the interior, and education, united in recommending to the King the reintroduction of turning. In June following, the King gave his sanction to the proposal of his ministers that "bodily exercises should be acknowledged formally as a necessary and indispensable integral part of male education, and should be adopted as an agency in the education of the people." The King also authorized the establishment of "gymnastic institutes," in connection with "the Gymnasien, the higher middle schools, the training schools for teachers, and the division and brigade schools in the army."

THE REVIVAL OF TURNING.

Volksturnen revived, after the promulgation of the above cited cabinet order of King Frederick William IV; but its aims and usages were too strongly colored by political views for the turning societies to pass unscathed through the troublous years 1848–'50. It was not until 1860 that the turning movement began to regain its lost momentum. Great enthusiasm for turning was awakened by the first German turning festival, held at Coburg, in 1860, in which some thousand or more turners took part in celebrating the victory of Waterloo. In August, 1861, came the second general *Turnfest*, when the turners celebrated, at Berlin, the fiftieth anniversary of the establishment, by Jahn, of the original turnplatz in the Hasenheide. Nearly six thousand turners, representing more than two hundred and sixty districts, took part in this festival, which is also notable for the laying of the corner-stone of the national monument to Jahn. The completed monument, consisting of a bronze statue of Jahn upon a pedestal of stones contributed by turning societies in every quarter of the world, was dedicated in August, 1872.

Between 1859 and 1862 the number of German turnvereine increased from 241 to 1,279. In 1863, 20,000 turners took part at Leipzig in the celebration of the fiftieth anniversary of Napoleon's defeat near that city by the allies. A year later the societies numbered nearly 2,000, and their members nearly 168,000. The great majority of German turnvereine have, since 1860, belonged to the organization known as the *Deutsche Turnerschaft*.

THE "DEUTSCHE TURNERSCHAFT."

The Turnerschaft comprises fifteen circuits, or geographical divisions, within the German Empire and Austria. Each circuit (*Kreis*) is subdivided into districts (*Gaue*), and each district into societies (*Vereine*). On January 1, 1885, there were 220 *Turngaue* within the Turnerschaft. In 1880, out of 2,226 turnvereine in 1,741 municipalities and villages, 1,971, with a total membership of 170,315, belonged to the Turnerschaft. On January 1, 1885, the number of vereine within the Turnerschaft had risen to 2,878, an increase of 223 over 1884; while the number of vereine outside the Turnerschaft had decreased from 343 to 329. The membership in 1885 was 267,854, of whom 114,134 were active turners; or, to express it differently, in 2,413 localities there was an *active* member of the Turnerschaft for every 134 of the population. During 1882, 1,915 vereine practiced turning in the winter; 294 owned a turnplatz, and 153 a turnhalle; while in 1884, 2,409 societies practiced winter turning, 353 owned a turnplatz, and 182 owned a turnhalle.

It is almost as common to find turnvereine among Germans in foreign lands as to find cricket and foot-ball clubs among British colonists. Turning societies flourish in the United States, Brazil, Chili, and Australia, as well as in every country in Europe. In the United States the principal association of the turners is the North American Turnerbund, which embraces more than two hundred vereine with a membership of more than twenty thousand.

The nature and working of the spirit which animates the German folk are disclosed to a highly interesting degree in the organization and the management of the *Deutsche Turnerschaft*, which is, in a sense, the most genuinely popular of German institutions. In their Volksturnen we find the people acting with more freedom and spontaneity than in almost any other field. It is one of the few fields in which the folk has been left comparatively untrammeled by the Government. While its aims are broadly national and social, and tinged with sentimental idealism, the Turnerschaft reflects in its democratic organization and government, its systematic methods, and its economical administration, the severely practical German spirit, with all its love of order, discipline, and minute division of labor. The turnvereine are in their way as much center points of the popular life of Germany as the gymnasia were center points in Greek life. It is to be noted, however, that the Turnerschaft is largely recruited from such classes as were enslaved by the Greeks.

Volksturnen of the present day differs somewhat from that which flourished in the time of Jahn and Eiselen. Individualism is less rampant for one thing, and certain styles of exercise first made prominent by Spiess, whose method and work we shall consider under Schulturnen, have been adopted by the turners. Then, too, the turnvereine have ceased to resemble political clubs. The committee of the turnvereine declared at Gotha in 1861 that turning could only yield abundant fruit when it should be considered a means for training strong men for the entire fatherland. The turnvereine should hold themselves entirely aloof from the consideration of party questions as such. The formation of definite political opinions was the affair and duty of the individual turners. The general adoption of military exercises by the turners was deprecated. A genuine normal training to render the body equal to the performance of all manly exercises should remain the principal concern and business of the turnvereine.

The hand-book of the *Deutsche Turnerschaft* very clearly sets forth the distinctive features of the Volksturnen of the present day. What follows in relation to the aims, organization, and practices of the Turnerschaft is based upon statements made in that work, and in the organ of the Turnerschaft, the *Deutsche Turn-Zeitung*, a weekly paper published at Leipzig, and also upon personal observations made in various German cities, particularly in Dresden, during the continuance of the Sixth General German Turning Festival, held there in July, 1885.

The aim of the Turnerschaft is to promote the interests of turning, as a means to bodily and moral strength. Its members (any German of good moral character who is fourteen years old, may join it) are urged to render turning attractive to boys and apprentices who have passed the school age; to cultivate simple German customs and manners; to cultivate national exercises and games, such as free and class exercises, running, leaping, climbing, casting the weight, hurling the spear, wrestling, fencing, and sword play; to promote sociability through the singing of folk songs, and those having freedom and the fatherland for their themes—such songs should be thoroughly known by every turner, and not merely their first lines; to participate in all popular festivals, especially those commemorative of national events, such as the Kaiser's birthday, Sedan day, and the like; to manifest an active interest in useful public enterprises and associations, such as fire and salvage companies, and sanitary corps for the care and transportation of the sick and injured.

The turners are divided into two main sections, viz, boys from fourteen to seventeen years of age, and men. These divisions are subdivided according to their gymnastic ability into squads, or classes (*Riegen*), each class being under the lead and guidance of a "foreturner" (*Vorturner*), chosen on account of fitness. The chief foreturner is the turnwarden (*Turnwart*). Strength alone is not enough. It is the foreturner's business to make his squad as expert as possible, and above all to secure to each of its members an erect, firm, and graceful carriage of the body.

The times most favored for turning are Sundays, holidays, and certain appointed evenings during the week. The order recommended for the ordinary evening turning is as follows: A brief *Kürturnen*, *i. e.*, gymnastic exercise in which each individual follows his own taste and inclination as to apparatus and movement. Then comes the formation of the classes, which fall into line at a signal from the turnwart, and at a second signal march to the machines, the bars, horse, horizontal bar, etc., to which each has been assigned. The exercise on each piece of apparatus is set by the foreturner at the head of the class. Usually after exercising for a quarter of an hour the lines are reformed and each class marches to a machine of a different character. After this second period of fifteen minutes of heavy gymnastic exercise (*Gerätturnen*) the ranks are reformed, and "free movements" are made by the assembled classes. No apparatus is used in the free movements, which are made in unison and according to commands given by the turnwart. The evening closes with a second Kürturnen. The affairs of the verein are regulated by officers elected by its members. The programme of exercises, *i. e.*, the amount and nature of the Gerätturnen, or heavy gymnastics, is determined by the officers and is duly bulletined. The foreturners are bound to practice together at appointed times. The order of exercises on the gymnastic machines is changed from evening to evening, and variety and interest are further secured, when the weather is favorable, by engaging in out-of-door games (*Turnspiele*) in the turnplatz. The cultivation of gymnastic specialties and of one-sided dexterity is discouraged.

From time to time the societies comprised in a district, and the districts included in a circuit, hold festivals, when both individuals and squads compete for prizes. The intervals between these festivals vary greatly in the different circuits and districts. The General German Turning Festival (*Das Allgemeine Deutsche Turnfest*), as the grand festival of the entire Turnerschaft is termed, occurs at intervals of at least four years. It continues for at least three days, one of which must be Sunday. Six such festivals have been held in different German cities since the first was celebrated at Coburg in 1860.

THE DRESDEN TURNFEST IN 1885.

The programme carried out at the sixth *Deutsche Turnfest* in Dresden, July 18-23, 1885, was in the main as follows:

Saturday, July 18.

Reception during the day at the railroad station and steamer wharves on the Elbe of the visiting turners. At 8 P. M. reception at the festival hall. Transfer of the standard of the Turnerschaft from the Frankfort-on-the-Main color guard to the Dresden color guard. Celebration of the twenty-fifth anniversary of the founding of the Turnerschaft. Music and singing in the festival hall.

Sunday, July 19.

6 to 7 A.M. Reveille (*Weckruf*).

7 to 9 A.M. Bathing in the Elbe.

11.30 A.M. Formation of festival procession.

11.45 A.M. to 2.30 P.M. March to the festival grounds.

3.30 P.M. Assembly of turners and general free gymnastics in the festival grounds.

5 to 7 P.M. Class exercise (*Musterriegenturnen*) of the most proficient squads, representing single circuits, districts, and societies.

7 to 8 P.M. General Kürturnen and gymnastic games.

From 8 P.M., in the hall, concert by the united singing societies of Dresden.

From 5 P.M., on the grounds, music and dancing.

Monday, July 20.

7 A.M. to 12 M. Prize turning (*Wettturnen*) and class turning.
12 to 3 P.M. Banquet in the hall.
3 to 5 P.M. Free gymnastics by the Saxon turners, including the pupils of the higher boys' schools of Dresden.
5 to 7 P.M. Class turning; exhibition sword play (*Schaufechten*).
7 to 8 P.M. Kürturnen by the most expert turners. Games.
8 P.M. Convention of the German teachers of gymnastics.
8 P.M. Reunions of fellow-countrymen.
From 5 P.M. Music and dancing on the grounds and in the hall.

Tuesday, July 21.

7 A.M. to 12 M. Prize turning and conclusion of class turning.
2 to 3 P.M. Prize sword play (*Preisfechten*).
3 to 7 P.M. Prize turning.
7 to 8 P.M. Games.
9 P.M. Torch dance.
From 5 P.M. Music and dancing.

Wednesday, July 22.

7 to 10 A.M. Conclusion of prize turning.
10 A.M. to 12 M. Gymnastic games by the boys and girls of the public schools (*Volksschulen*) of Dresden.
2 P.M. Wrestling.
8 P.M. Announcement of the victors.
10 P.M. Illumination and official close of the festival.
From 5 P.M. Music and dancing.

Thursday, July 23.

Turner excursions (*Turnfahrten*) to the Saxon Switzerland, and other points of interest.
From 3 P. M. Social reunions on the grounds; music and dancing.

The festival was characteristically German in its object, arrangements, and detailed workings. It afforded an admirable opportunity for studying national traits and peculiar folk customs, and furnished abundant evidence of the sturdiness, good humor, and order-loving disposition of the common people, as well as of their genuine liking for and ability in gymnastic drill and gymnastic games. In the opinion of competent judges, moreover, a very considerable increase in gymnastic proficiency over that exhibited at any former festival was noticeable.

It concerns us here to note only the more striking of the turning exercises and regulations, without attempting to describe the festival as a whole, or venturing to enlarge upon its many attractions for the lover of the picturesque or the student of men, manners, and institutions.

More than 20,000 turners, including delegations from England, France, Russia, Holland, Switzerland, Austria, Hungary, Sweden, and the United States, took part in the street parade, which was reviewed by the King of Saxony from a balcony of his palace on Sunday. The grounds set apart for the use of the turners were something more than ten acres in extent, and were situated in the outskirts of the city, adjoining the Grosser Garten, the principal park of the King. Chief among the temporary buildings erected on the Festplatz was the festival hall, with an estimated capacity for 10,000 people. The main part of this hall was left unfloored, so that in case of unfavorable weather all the heavy gymnastics might take place under cover.

As the weather was fine during the entire continuance of the festival, the hall was used chiefly for speech-making and merry-making, and the turning of every description was carried on out of doors on the Turnplatz, which had an area of more than three-quarters of an acre.

The most noteworthy gymnastic features of the festival were as follows: The free gymnastics (*allgemeine Freiübungen*) on Sunday; the class turning of the most proficient turners (*Musterriegenturnen*) on Sunday, Monday, and Tuesday; the Kürturnen, or exhibition gymnastics, on Sunday and Monday; the prize turning (*Wettturnen*) on the last three days, and the gymnastic games of the Dresden school children on Wednesday.

The Free Gymnastics.

The free gymnastics resemble somewhat the "setting-up drill" employed in the United States Army, inasmuch as they are bodily movements arranged in groups of related exercises, which are executed at command and in unison. In them no apparatus of any kind is made use of. They may be characterized as calisthenics raised to their highest power. The free gymnastics on this occasion included sixteen different movements, and required nearly three-quarters of an hour for their completion. The order and character of the movements had been determined and ordained by the proper committee of the Turnerschaft months before, and the movements had been practiced by the different vereine at home, but only there. The turners who took part in the free movements numbered 4,544, and were formed in seventy-one "open ranks" of sixty-four men each, facing toward the front, the distance between the "files" being a full arm's-length. Facing the huge class was a high platform, on which two marvelously expert foreturners first executed each movement in sight of the class, and then, at signals given with a flag by the turnwart in command of the class, and re-enforced by strokes given on gongs in the middle of the field, the foreturners repeated the movement, the entire body of 4,500 men following in unison. The sight of 4,500 bareheaded, white-shirted men, many of them grayheaded, executing complicated movements, which involved tossing of the arms, bowing and bending of the trunk, facing now this way and now that, and all with military precision, in nearly perfect time, was a novel and inspiring one. The free movements, on Monday, of the Saxon turners and the Dresden school-boys, in all 2,300 persons, were even more complicated, difficult, and picturesque than those above spoken of. The King and Queen of Saxony, with a numerous retinue of courtiers, were among the interested spectators of the free movements on Sunday.

The Class Turning, or "Musterriegenturnen."

Class turning under the lead of a foreturner has been a peculiar feature of Volksturnen since the days of Jahn, and many of the machines used in this class of exercises were devised by Jahn and his early followers. Such are the parallel bars, the horizontal bar, the horse, and the buck. Only the most proficient members of a verein are allowed to represent it in the *Musterriegenturnen*. At Frankfort, in 1880, sixty-one classes, or squads, were entered under this head. At Dresden the number of classes entered was two hundred and seventy-six. Of these, one was from the United States, one from Belgium, one from Denmark, one from Hungary, and four were from Holland; the remaining 268 were from within the Turnerschaft. Of the 276 classes entered, 244, comprising 2,517 turners, turned and were reported upon by the judges. The number of turners in a class varied from four to sixty-four; the mean number was, however, nine. The extremes of age were sixteen and seventy-one years. An unusual number of men past middle life took part in the heavy gymnastics. There were fully a dozen classes composed of men over forty years old, and nearly three hundred men over thirty-five years of age appeared in the ranks of the "proficients." The class of the "Eldest turners," numbering eleven men between the ages of sixty and seventy-one, engaged in free movements, putting the stone, and high leaping; while several squads of younger veterans, ranging in age from forty to sixty, exercised on the parallel bars, the horse, and the inclined ladder. Yet there are those who would have us believe that agility and bodily force in adults are the almost sole possession of the modern Englishman! If they would take the trouble to inform themselves in regard to the national games of the Germans, the Norsemen, and the Swiss, they would learn that the athletic vesture of the ancient Greeks has not all fallen to the lot of the British.

Each class was allowed twenty minutes for exercise, and machines enough were provided for twenty classes to exercise at a time. It was the duty of the judges to note and report upon the number, age, and general appearance of the class members; upon their carriage, marching, and clothing, as well as upon the worth and character of the exercises chosen by them and the degree of their proficiency in the exercises. The ability of the foreturner and his use of technical terms (*Turnsprache;* this has attained the proportion of a special dialect) were also items for note and comment.

The scale of marks for the actual turning ranged from 5, extremely good, through 3, barely good, to 0, bad. Of the 244 classes reported on, the rating of the judges was as follows:

18 classes were marked 5.
10 classes were marked 4 to 5.
70 classes were marked 4.
23 classes were marked 3 to 4.
87 classes were marked 3.
18 classes were marked 2 to 3.
13 classes were marked 2.
1 class was marked 1.

In the case of four classes the report was incomplete.

Some notion of the kind of exercises chosen may be gained from the following statement:

115 classes turned with the parallel bars.
51 classes turned with the horizontal bar.
51 classes turned with the horse.
1 class turned with the buck.
3 classes turned with the buck and horse.
2 classes turned with the buck and horizontal bar.
6 classes turned with the flying rings.
2 classes turned with the jumping table.
1 class turned with the ladder.
5 classes engaged in wand exercises.
1 class engaged in free exercises.
2 classes engaged in wrestling.
1 class engaged in club swinging.
1 class engaged in disk throwing.
1 class engaged in casting weights.
1 class engaged in marching figures.

Outside of the class of professional acrobats and of the ranks of the Turnerbund it would be difficult, if not impossible, to find in the United States more than a handful of men who could compare in strength, agility, grace, and bodily self-control, with even the average member of the Musterriegen of the Turnerschaft. The reason for this is not far to seek. Those who affect gymnastics in America, whether for recreation or training, are, as a rule, ill-taught or not taught at all; while in Germany good teaching is general and highly appreciated.

The Prize Turning, or "Wetturnen."

The prizes for individual excellence in heavy gymnastics consisted simply of wreaths of artificial oak leaves and diplomas. Out of six hundred persons whose names were entered in the lists of competitors, only three hundred and seventy-eight put in an appearance. In 1880, at Frankfort, only one hundred and thirty out of a list of one thousand entries actually competed for the prizes. Of the three hundred and seventy-eight above mentioned, sixty-four withdrew before the completion of the competition, mostly on account of blistered hands or some other slight ailment. Of the three hundred and fourteen turners who made a complete record, thirty-six were adjudged victors, having scored at least fifty points out of a possible total of seventy-five points. Two of the victors were from the United States. All the victors received wreaths and diplomas. Under the rules, only the first eighteen were entitled to wreaths, but on account of the exceptional difficulty of the exercises the judges awarded wreaths to the second eighteen also. The best record made was sixty-one and one-eighth points. Each of the prize turners was required to execute three exercises on the horizontal bar, three on the parallel bars, and three on the horse. Two exercises on each of these machines had previously been ordained by the committee of the Turnerschaft; the third in each was left to the individual choice of the competitors. Each competitor was also required to try his skill in three selected "national games." Those selected by the committee for this occasion were high jumping, long jumping, and weight lifting.

The highest attainable mark in each of the nine "machine exercises" was five, and in each of the national games ten. Two of the victors scored five on the horizontal bar; seven scored five on the parallel bars; but none scored more than four and seven-eighths on the horse. One of the victors scored ten in high jumping, three scored the same number for long jumping, and ten scored ten in the weight lifting.

The victors did not seem to be men of phenomenal muscular development, though it should be said that the turner costume of loose jacket and trousers is not calculated to set off the figure to the best advantage. They did, however, exhibit an astonishing power of executing difficult and pleasing feats—feats which called for a combination of strength, dexterous agility, prolonged endurance, close attention, purposeful daring, and cool judgment. They illustrated most admirably the truth of the poet's lines—

> It is not growing like a tree
> In bulk, doth make man better be.

The qualities which make "the better man" among athletes and gymnasts are moral and mental, rather than muscular, in their nature. Muscular action, unless it be altogether abnormal, cannot be dissociated from mental and nervous action. Precise and purposeful movements of the trunk and limbs involve the possession of an intelligent and educated nervous system. From the failure of parents and teachers to apprehend this fact, it has come to pass that the average man can control and use only fractional parts of his muscular system. The German turner's aim is to make his entire body the ready servant of his will, and every Turnfest demonstrates the fact that he has achieved an encouraging measure of success.

Sword play and wrestling were minor attractions of the festival. Under the former head were included contests with the foils, the *Schläger*, or straight sword, such as is used in the ordinary students' duel, and the saber. Such contests were included in the programme of a general festival of the Turnerschaft for the first time at Dresden. Twenty-eight men fought with the foils, fourteen men with the schläger, and twenty men with the saber. Only thirty-two men engaged in the contests in wrestling. Only such turners as had completed the twelve exercises ordained for the prize turning were eligible to take part in the wrestling.

On Wednesday the Festplatz, from 10 A.M. till noon, was given up to the games of the Dresden school children. There exists a general but erroneous opinion among foreigners that German children do not play, though the history of the kindergarten system and of school turning affords abundant evidence to the contrary. Not only have the Germans a great variety of national games for children and youth, but in many cases they have made vigorous efforts to introduce and acclimatize foreign games, like cricket and foot ball. Base ball and lacrosse are apparently unknown to them. In some cities, and notably in Berlin, Dresden, and Frankfort, special efforts are made by the school authorities and various private associations to secure public play-grounds for the children of all classes, and much has been accomplished in this direction. No one could witness the play of 1,600 school girls and 1,200 school boys, under the lead of their teachers, on the Dresden Festplatz, and deny that German children are gamesome as well as tractable. The girls played at catch, running races, ball, skipping rope, etc., and the boys engaged in foot ball, bat and ball, tug of war, and the like. As a rule, the German school and city authorities provide more generously and intelligently for the recreation of the children under their charge than is the case in Great Britain or America.

SCHOOL GYMNASTICS.

We pass to a consideration of the salient facts regarding the development and present organization of school gymnastics (*Schulturnen*) in Germany, particularly in Prussia. The essential differences between Volksturnen and Schulturnen are based on the fact that the former is a free art, originating with and maintained by the common people, and the latter is a discipline imposed by authority upon persons in a state of pupilage. The ends of training and education are not lost sight of in Volksturnen, but in Schulturnen they occupy the foreground.

Although Volksturnen has lost many of the extravagant and marked peculiarities of its assertive and aggressive youth, and has become better regulated and systematized with the lapse of years, it still bears the impress set upon it by Jahn and the times which produced him. The democratic organization of the turnvereine; the voluntary submission of the turners to taxation, drill, and discipline, for common and patriotic ends, and the predilection for heavy gymnastics under foreturners, all survive. The turners are men and youths who devote a portion of their spare time, particularly during the evening hours and on holidays, to the exercises of the turnplatz and the turnhalle, for the sake of social entertainment and the promotion of health. Schulturnen, on the other hand, is a department of instruction in the educational system ordained by the state. As such, it is administered by officers of the state, who aim, by means of a graded, progressive series of bodily exercises, to bring about the symmetrical and normal development of pupils of both sexes, ranging between the ages of six and twenty.

School turning works in the interest of folk turning by preparing promising recruits for the turnvereine, and the turners have ever been its zealous friends, doing much to secure its spread and to enhance its usefulness.

The Work and Influence of Spiess.

It is chiefly to Adolf Spiess and his followers that German Schulturnen owes its most distinctive and valuable peculiarities. Spiess was a Hessian, born in 1810. Like Jahn, he was a pastor's son and a teacher. In his father's private school, which was conducted according to the principles of Pestalozzi, he was trained in gymnastics, partly after the methods of Guts Muths and partly after those of Jahn. While a student of theology at the universities of Giessen and Halle, he was an active turner and duelist. In 1829 he became acquainted with Jahn. In the following year, while still a student, he formed a class of boys at Giessen, and made a beginning in teaching what came to be known as "common exercises" (*Gemeinübungen*), or class drill "in standing, walking, running, and jumping." "Class turning," consisting in the simultaneous performance by a number of persons, either with or without the aid of apparatus, of a given exercise at the word of command, was introduced by Spiess, and lies at the foundation of his system of physical training; whereas in the Jahn-Eiselen system the members of the class followed in succession the example set them by their foreturner.

In 1833 Spiess became a teacher of history, singing, drawing, and turning, in the public schools of Burgdorf, a town in the canton of Bern, in Switzerland, where he became intimate with Froebel. Spiess is sometimes called the "creator of gymnastics for girls" (*Mädchenturnen*). The exercises for girls which he introduced at Burgdorf were chiefly of his own devising. They included free gymnastics, dumb-bell exercises, and exercises on the suspended ladder and the see-saw, besides a variety of exercises in running, jumping, and swinging. In 1844 he removed to Basel to take charge of the gymnastic instruction in the higher schools of that city.

In 1848 Spiess returned to Germany, having been appointed to a high office in the department of education of the Grand Duchy of Hesse, and took up his residence in the city of Darmstadt. It devolved upon Spiess to organize and supervise school turning throughout that state. In 1849 and 1850 he conducted special normal classes for the purpose of preparing trained assistants for his work. At Darmstadt, as at Basel and Burgdorf, Spiess was highly successful in introducing gymnastics into schools for girls. He died in 1858.

Spiess based his theory of bodily training on the laws of anatomy and physiology, and grouped and ordered his exercises in compliance with those laws. He applied his principle of common exercises to the Jahn heavy gymnastics as well as to the free movements, which latter were often made to music. It was his distinctive work to render German gymnastics systematic and scientific, and to adapt them to pedagogical purposes and methods. As a teacher, organizer, and writer, his influence has been wide and weighty. His principal books were "*Lehre der Turnkunst*," Basel, 1840–'46, and "*Turnbuch für Schulen*," Basel, 1846–'51.

The Rise of School Gymnastics in Prussia.

Allusion has already been made to the cabinet order of June, 1842, in which Frederick William IV formally recommended the adoption of "bodily exercise as an indispensable integral part of male education" throughout the Kingdom of Prussia. Eichorn, the minister of education, by an ordinance issued in February, 1844, undertook to carry the King's recommendations into effect. This ordinance directed that a sufficient number of turnplätze and turnhallen should be established to furnish all the Gymnasien, higher burgher schools, and normal schools for males, with accommodations for winter and summer turning. Those in charge of school affairs were charged to do their utmost for the promotion of the new department of instruction. When it was feasible, pupils were to exercise daily for an hour after school. At least the afternoons of Wednesdays and Saturdays should be devoted to gymnastics, on which days no home study was to be exacted. In the "certificate of ripeness," given at the "leaving examination," the examiner must indicate the degree of gymnastic ability attained by the candidate.

Spiess had an interview with Eichorn in Berlin, in the summer of 1842, in relation to the proper mode of organizing school gymnastics, and there seems to have been a somewhat general expectation that he would be called from Burgdorf to Berlin. Spiess was, however, passed by, and Massmann, who had since 1827 been engaged in teaching gymnastics in Munich, where the sons of Ludwig I, King of Bavaria, and the royal corps of cadets were numbered among his pupils, was in 1843 called to Berlin to aid Eichorn's department in carrying into effect the views expressed in the King's cabinet order.

Massmann had been a Berlin turner in the palmy days of 1811–'13, and was strongly wedded to the methods of Jahn and Eiselen. He looked with disfavor upon the new methods of Spiess, and, not being endowed with sufficient skill or energy to adapt Volksturnen to school needs, his administration, which lasted until 1850, was, on the whole, a failure.

A serious obstacle to the success of gymnastics in the schools was the lack of competent teachers. To meet this want the Central Normal School for Training Teachers of Bodily Exercises was opened in Berlin, under Massmann's direction, in 1848. The school died in 1849. In 1851 the Royal Central Gymnastic Institute, with parallel courses of instruction for officers of the army and school teachers, was established in Berlin under the conjoint control of the ministers of war and education, and Capt-

H. Rothstein, of the Prussian army, was placed at its head. This institute has exercised a powerful influence upon the rise of military and school turning in Prussia. Its dual constitution remained unchanged until the year 1877; since then two separate training schools have been in operation; the one for army officers is entitled the *Königliche Militärturnanstalt;* the other, for teachers of turning in the schools, is termed the *Königliche Turnlehrerbildungsanstalt.*

Rothstein was a firm partisan of the Swedish system of gymnastics as developed by Ling and his followers, while the civilian teachers of the Central Institute either favored the Jahn-Eiselen system or a compromise between it and that of Spiess. Rothstein banished the horizontal and parallel bars from the institute, thereby giving rise to a long and bitter controversy. The turners and their champions attacked the Swedish gymnastics on the ground that they were too formal, one-sided, and uninteresting, as well as un-German and outlandish. Medical men and university professors took an active part in the discussion over the merits and faults of the "bar exercises." Professors Virchow and Du Bois-Reymond, of the Berlin University, stood up for German gymnastics and the "bars." Finally, in December, 1862, a commission, composed of the most eminent medical men in Prussia, declared that "the bar exercises might, from a medical point of view, be improved, but ought not to be done away with." The triumph of the "bar exercises" involved the defeat of the Ling-Rothstein system of school turning. In 1863 Rothstein left the Central Institute; in 1865 he died.

In 1860 Lehnert, then minister of education, issued an order for the gradual introduction of gymnastic instruction into the elementary schools (*Volksschulen*) for boys. In 1862 attendance upon such instruction was made obligatory. In recent years turning has become quite general in girls' schools of all grades. It is obligatory in female normal schools, and also in all the girls' schools of some cities, for example, those of Berlin, Frankfort-on-the-Main, and Hanover.

THE ORGANIZATION SCHOOLS AND ARMY

Popular education in the German sense involves compulsory attendance upon school instruction and compulsory military service.[1] Speaking broadly, the state requires every Prussian child to go to school for eight years, and every Prussian man to serve twelve years in the army. In order to render clear the relation which physical training bears to school training on the one hand, and to military training on the other, in the Prussian system of education, we must first give some account of the organization of the Prussian schools and army, and of the character of the instruction imparted in each.

The population of Prussia may be divided, for convenience, into three classes: (1) The *Volk*, which includes 90 per cent. of the whole, and embraces the peasant class and unskilled laborers of every sort; (2) the middle class, embracing the burgher class, the farmers, the smaller tradesmen and manufacturers, skilled mechanics, and a great variety of petty officials; (3) the scientifically educated or upper class. To this class belong the officers of the army, professors in the universities, teachers in the schools of superior instruction, literary men, the members of the learned professions, the great landowners, manufacturers and merchants, and officials in the higher grades of the civil service.

There are three grades of schools corresponding to the social classes above mentioned: (1) The elementary schools (*Volksschulen*); (2) the intermediate schools (*Mittelschulen*), including the so-called "burgher schools" and the lower *Realschulen;* (3) the higher schools, including the *Gymnasien*, *Realgymnasien*, the normal training schools, the technical schools, and the universities.

In the army the rank and file (*Soldaten*) are drawn from the *Volk;* the under-officers corresponding to our non-commissioned officers come mostly from the middle classes;

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[1] Prussia pays annually not far from $37,000,000 for her schools and $50,000,000 for her army.

and the officers, who constitute the only professional military class, belong to the upper class, and are to a large degree of noble birth. Regimental schools are provided for the soldiers; schools of a higher sort for the under-officers; while the scientific training of the officer class is carried on in the cadet institutes, the war schools, and the War Academy.

The Schools.

The elementary schools in the larger cities and towns consist usually of eight classes, in which instruction is provided for children between the ages of six and fourteen. The complete course, which is not always enforced in the remoter country districts, embraces the following subjects: Religion, reading, writing, the common rules of arithmetic, the rudiments of algebra, the elements of geometry, history, drawing, geography, elementary physics and natural history, German composition and grammar, singing, and gymnastics. Girls are, in addition, taught sewing and knitting.

The intermediate schools have only a five or six years' course. They aim at giving a practical education, supplementary to that of the elementary schools, for pupils intending to follow technical, industrial, or mercantile pursuits, or who look forward to subordinate positions in the civil service. French and English are taught in these schools, but the ancient languages are not.

Both the Gymnasien and the Realgymnasien have a nine years' course, in classes designated in descending order: I. A., or *Oberprima;* I. B., or *Unterprima;* II. A., or *Obersecunda;* II. B., or *Untersecunda;* III. A., or *Obertertia;* III. B., or *Untertertia;* IV., or *Quarta;* V., or *Quinta;* and VI., or *Sexta.*

In the Gymnasien much attention is given to Greek and Latin, while French and English are less thoroughly taught. The Gymnasium graduates usually enter the university for the sake of preparing themselves to enter upon a career in one of the learned professions, or in one of the higher grades of the civil service.

The course of the Realgymnasien differs from that of the Gymnasien in that Greek is omitted, and that more stress is laid upon mathematics, natural sciences, and the modern languages. The graduates of a Realgymnasium are admitted to one only of the university faculties, that of philosophy, with its departments of natural science and modern languages. As a rule they pass to one of the higher technical schools instead of to the university.

The normal schools for teachers are of the nature of special technical schools having a three years' course. Preparatory schools (*Vorschulen*) with a three years' course have been organized in connection with many Gymnasien, Realgymnasien, and higher girls' schools, so that children of the upper classes need not mingle with the children of the Volk in the elementary schools.

The Army.

With few exceptions, the able-bodied men of all classes are liable to be called on for military service as soon as they reach the age of twenty and until they have attained the age of forty-two. The term of active service "with the colors" is three years, during which period the soldier is continuously subjected to military discipline, and is liable to be sent to the field in case of war. Then follow five years of service in the reserve, during which one is occasionally, and for some weeks at a time, called out for drill, or to take part in mobilization or the annual field maneuvers. Men in the reserve are liable to field duty, either at home or abroad, in case of war.

In the *Landwehr* the term of service is four years. Service with the colors for three years and in the reserve for five is considered sufficient to make a trained soldier of a man, so that members of the Landwehr in time of peace are released from active military duty of any kind. They are, however, organized into regiments, and must keep their arms and accouterments in readiness for instant service. The Landwehr is officered mostly by men from the middle classes. In time of war the Landwehr ga

ns the forts, guards the frontier and the prisoners captured from the enemy, and
ers the lines of communication between the base of supplies and the field army.
Landsturm, composed of men between thirty-two and forty-two years of age, is
y called out for purposes of defense and in case of great need.

he German Empire can muster 1,300,000 trained soldiers, excluding the Landsturm,
the different states. The Prussian army, on a peace footing, numbers more than
,000 men and under-officers, and 14,000 officers. It can be mobilized for field serv-
in a week.

soldier who becomes incapacitated after eight years' service for further active
vice, or who has been for eighteen years in active service, may demand a certifi-
e recommending him for such a place in the civil service as his education may fit him
Accordingly schools for the further instruction of soldiers in reading, writing,
mmar, geography, arithmetic, history, and drawing, are organized in every regi-
nt. Six special schools for the higher training of under-officers are also maintained
the War Department. The same studies as those pursued in the regimental schools,
certain other special subjects, are taught in the under-officer schools; but the
jects are pursued farther. A soldier with a good record, if he is intelligent enough
ass the examination for promotion to the grade of under-officer at the end of
lve years' service, *i. e.*, at the expiration of his service in the Landwehr, becomes
ible, is, indeed, a sort of preferred aspirant, for a subordinate post in the civil
vice. Such positions are those of janitor, messenger, clerk, etc., in various gov-
mental bureaus which pertain to postal, customs, telegraph, and railroad affairs.
n under-officer possess the necessary qualifications, after nine years' service in the
y and at least five years' service as an under-officer, he may be appointed a gen-
me or become a policeman. Almost all the offices with which in America "the
s" are rewarded for yeoman service in "politics," are in Prussia given as rewards
erit and intelligence to old soldiers.

The Training of Officers.

he ordinary course of procedure by which a civil aspirant attains to the lowest grade
he corps of Prussian officers, that of second lieutenant, is as follows: (1) He is nomi-
ed an *avantageur* by the colonel of some regiment; (2) he serves for six months
he ranks; (3) he passes the examination for promotion to the grade of "sword-knot
ign," the requirements of which examination are practically the same as those of the
aving examination" at the completion of the course in a Gymnasium or Realgym-
ium; (4) then, after ten months of professional study in a war school (*Kriegsschule*),
asses the "officers' examination"; (5) and in case the officers of the regiment to
ch he has been nominated vote favorably upon him, he is commissioned a second
tenant by the King.

erhaps a third of those who enter the corps of officers receive their preliminary
cation as members of the corps of cadets. Since 1877 the course of study in the
et institutes has been the same as that followed in the Realgymnasien. There
six lower cadet institutes in Prussia, having five classes, viz: VI., V., IV., III. B.,
III. A.; and one chief cadet institute, that at Lichterfelde, near Berlin, having
ses which correspond to II. B., II. A., I. B., I. A., of a Realgymnasium, and an
anced class, the "*Selecta*." For each class a year's work is laid out. Boys from
to fifteen years are received in the lower cadet-schools. The corps of cadets is
ely composed of the sons of officers. It numbers 2,088 members, 880 of whom are
Lichterfelde. All of the cadet institutes are organized with two boards of in-
ctors, an academic board of civilians, and a military board of officers, and are
ject to military regulations. The discipline is strictest in the chief institute.

premium is put by the state on mental training, by allowing all who hold certif-
tes of fitness to enter Obersecunda (II. A.) of a Gymnasium or Realgymnasium, to ab-
ve their service with the colors by one year's volunteer and unpaid service. Fitness

to enter Unterprima (I. B.) entitles one to stand the "sword-knot-ensign" examination on completing six months' service as "avantageur" in the ranks. The "certificate of ripeness," *i. e.*, of having completed satisfactorily the studies of Oberprima (I. A.), admits its possessor to the University or to the higher civil service positions, and exempts "avantageurs" from the "sword-knot-ensign" examination.

In the chief cadet institute, at Lichterfelde, when a boy is seventeen years of age and his bodily development is up to a certain standard, if he has passed II. A., *i. e.*, is ready to enter Unterprima, he may try the "sword-knot-ensign" examination. If he pass this examination he may (*a*) begin his service in the ranks and aspire to the officers' examination at the end of the required course of study in a war school; or (*b*) he may, if a very promising youth, be admitted to the Selecta; or (*c*), should he not aspire to an officer's career, he may enter the ranks as a volunteer for one year (*Einjährig-Freiwilliger*). Many cadets complete the course laid out for Unterprima (I. B.) in order to be eligible, should they ever leave the army, to positions in the higher grades of the civil service, which would otherwise be closed to them on the ground of insufficient education. Should he complete the year I. A. satisfactorily, a cadet may enter a war school at once, being then exempt from serving as an "avantageur," and from passing the "sword-knot-ensign" examination. If he pass the officers' examination, he may receive his commission from the King as second lieutenant without being voted on by the officers of a regiment. The cadet who goes successfully through the Selecta is not required to enter the ranks, or even to attend a war school, but is promoted directly from the corps of cadets to that of officers.

There were formerly nine war schools for the special preparation of civil aspirants for the officers' examination. Within recent years they have been consolidated to three. The ten-months' course of study in the war schools is of a strictly professional nature, such subjects as tactics, fortification, siege practice, and the like, being included in it. Concerning the physical training in the cadet and war schools we shall speak under the head of Military Turning.

The War Academy (*Kriegsakademie*) in Berlin is the central scientific school of the German army. At the most, only three hundred officers may attend its classes, each class in the three years' course being limited to one hundred members. Only officers who have served three full years with the troops, and are recommended by their colonels as men of exceptional energy, character, and intelligence, are allowed to attempt the severe entrance examination in mathematics, history, geography, military science, and the French language. Nine months of each year of the course are devoted to scientific instruction, which consists of lectures of the most advanced character given by civilian and military professors, while the remaining three months are yearly given up to practical studies in topographical engineering and general staff duty, and in familiarizing the student with other arms of the service than his own. The course at the War Academy is so severe, its examinations and practical tests so minute and searching, that only a very few, the "best of the best," are able to pass into the charmed circle of the general staff, under Field Marshal Von Moltke. The men composing the general staff of the Prussian army are the consummate flower of Prussian education. As a corps they are unrivaled, and the individuals are few anywhere who possess trained powers of mind and body in anything like so high a degree.

SCHOOL GYMNASTICS.

As regards physical training in the schools of Prussia, the case stands thus: Attendance upon instruction in turning is exacted of all unexcused pupils for two hours weekly in all schools for boys, and also, in some cities, in all schools for girls. As a rule, each school has its own turnhalle, and in very many cases its own turnplatz, furnished with appropriate gymnastic machines. Some cities, for instance, Frankfort-on-the-Main, provide special playgrounds and swimming baths for the use of school children.

While gymnastic drill is not universal in the public schools, it is very general. As might be expected, it is more common and better provided for in the cities than in the country. In 1882 only ten per cent. of the pupils in the higher schools for boys were excused from turning, and they were excused on the certificates of physicians that the exercise would be prejudicial to their health; only eighteen per cent. of this class of schools were obliged to discontinue turning in winter through having no proper turnhalle, and sixty per cent. of them possessed a turnhalle.

In the course of study each class has its special time for gymnastics, just as it has special hours set for arithmetic and reading, and in the majority of cases the instruction is given by one of the ordinary class teachers, and not by a special teacher of turning. The amount of time devoted to turning, singing, and drawing, is usually the same, viz, two hours weekly.

The exercises are carefully adapted to the age and sex of the pupils. The youngest pupils, from six to ten years old, engage in a great variety of simple games, easy, free movements, marching, jumping, and climbing exercises, and the fundamental exercises on the easier gymnastic machines. In free, light, and heavy gymnastics the exercises grow more complicated and difficult with the advancing age of the pupil. The expertness of the boys in the upper classes is often quite astonishing. In the Gymnasien and Realgymnasien fencing is taught in the upper classes. Pedestrian tours, skating parties, and excursions into the woods are frequently made under the lead of those who teach turning. The gymnastic course for girls comprises the ordinary free gymnastics; class gymnastics with "hand apparatus," such as dumb-bells, wands, and skipping ropes; marching, dancing, and balancing exercises; various games of ball, easy jumping, swinging, and climbing; and a few of the simplest exercises on the parallel and horizontal bars. Singing, especially during the march and the minuet, is frequently engaged in during the hour given to gymnastic instruction.

In nearly every university, voluntary associations of students are formed to practice turning. The university masters of sword-play and riding are survivals from feudal times.

SCHOOL GYMNASTICS IN BERLIN.

In 1881 there were 4,815,974 children of school age in a total population of 27,250,000 in the Kingdom of Prussia. The number of teachers was over 61,000. The population of Berlin in 1880 was 1,122,330. The total number of pupils in schools of every kind in the city was more than 149,000, of whom not more than 25,000 were in private schools. In schools wholly maintained at the city's expense, there were 104,726 pupils. Of 70 turnanstalten, 9 were under royal patronage, including the *Militärturnanstalt*, the *Turnlehrerbildungsanstalt*, and the gymnasia belonging to the Royal Asylum for the Blind and the Royal Institution for the Deaf and Dumb. Of the 62 turnhallen belonging to the city, 41 had turnplätze adjoining or near to them; 2 belonged to higher schools for girls; 11 belonged to higher schools for boys; and 48 belonged to schools of the grade of Volksschulen (termed in Berlin *Gemeindeschulen*); and 1 belonged to the Berlin Orphan Asylum. The city paid nearly $50,000 in 1880-'81 for the instruction given its school children in gymnastics, which sum is equal to about one twenty-third of its total expenditure for schools in that year.

In June, 1885, Berlin provided free-school instruction for some 143,000 children, which shows an increase of 10,000 over the corresponding class in 1884. On the same date the city had 148 Gemeindeschulen in operation, and buildings for 8 more in process of construction. The new school-houses are provided with turnhallen.

The present number of city turnhallen used for educational purposes in Berlin is 98. The largest of them is the *Städtische Turnhalle*, in the Prinzenstrasse. This was established in 1864; its cost was as follows: for land, including a turnplatz, 99,000 marks; building, 254,000 marks; apparatus, 18,000 marks; total, 371,000 marks, or $92.750. The building is of brick, and consists of two three-story wings and a one-story main hall. The wings contain residence flats for the use of the officials charged with the oversight and direction of school gymnastics. The main hall is 150 feet long, 75 feet wide, and 48 feet high, and easily accommodates 400 turners at a time. Adjoining it is a well-appointed turnplatz, with an area of more than half an acre, which is planted with shade trees. The City Turnhalle is open every day and evening, and is used at appointed times by several of the Berlin turnvereine, also by the association of Berlin teachers, the royal firemen, the normal classes for teachers of turning, and by eight of the city schools for school turning. In all, more than 13,000 persons exercise here weekly. The annual appropriation for its maintenance, exclusive of salaries, is between $2,500 and $3,000.

As a rule, the school gymnasia in Germany are separate and specially designed buildings, and not refitted rooms. As a class, the German gymnasia are not so luxuriously fitted or so architecturally imposing as many of the newer American college gymnasia, but they are admirably adapted to the teaching of free and class gymnastics of every description. As much as possible the apparatus is adjustable and portable. A plain, one-story, brick turnhalle, 60 by 33 feet and 15 to 20 feet high, can be built in Germany at a cost of $5,000, and well furnished with apparatus for $1,000.

The city of Frankfort-on-the-Main, which is about the size of Washington, D. C., spends yearly about $27,000 for the gymnastic instruction of its school children, some 18,000 in number. About one-third of this sum goes toward the furtherance of turnspiele. Boys and girls, unless excused on a physician's certificate, have two hours' weekly instruction in turning, and two hours weekly of compulsory play besides. The majority of the school children in Frankfort are also taught and practiced in swimming under the auspices of the city.

In this connection the following facts regarding the Volksschulen of Vienna may be of interest: In 1882-'83 Vienna, whose population in 1880 was 704,756, had 72,912 pupils in its 135 Volksschulen. Of this number 44,614 (20,047 of whom were girls) practiced turning under the guidance of 658 teachers. The city paid for the teaching of turning and the care of the turnhallen, in 1882-'83, a sum equal to $34,860, or one-twenty-ninth as much as its total ordinary expenditure for the Volksschulen.

THE TRAINING OF TEACHERS OF TURNING.

The teachers of gymnastics in Prussia, indeed throughout Germany, are specially trained for their duties. They are not, as is too often the case in England and America, retired drill sergeants, broken down athletes, or merely enthusiastic gymnasts. There are, it is said, more than 1,000 teachers in Berlin alone who are competent to give instruction in turning. According to the regulations now in force, in order to be installed as a teacher of turning in a Prussian school, one must first pass a satisfactory examination and secure a certificate of fitness; such certificates must be obtained at Berlin, and from one of two sources, viz., the *Königliche Turnlehrerbildungsanstalt*, or the *Turnlehrer Prüfungs Kommission*. The latter is simply an examining board, originally established in 1867, which holds examinations for male candidates annually in February, and for female candidates in the spring and autumn of each year.

The Turnlehrerbildungsanstalt holds two examinations yearly, one at the end of its winter course of instruction for male teachers, the other at the end of its spring and summer course for female teachers. Those who take the examinations set by the Kommission are mostly teachers who have attended courses in turning at a normal school, or have received special training in classes formed for the purpose by the educational authorities of one of the provincial cities; some are university students who look forward to a teacher's career.

At the examination held by the Kommission in November, 1884, 43 women passed; at that held in February, 1885, 39 men passed, 8 of whom were pronounced fit to teach swimming as well as turning; 83 women were passed at the examination in May, 1885. The number of males who completed the winter course of instruction at the Turnlehrerbildungsanstalt and secured the certificate of fitness to teach turning was 71, of whom 42 were passed also in swimming; while the number of women who were passed at the close of the course given in April, May, and June, 1885, was 82, of which number 28 took the course of instruction in swimming.

The examinations of the board of examiners of teachers of turning (*Turnlehrer Prüfungs Kommission*) are conducted by a board consisting of the principal teachers belonging to the Turnlehrerbildungsanstalt and other teachers of turning named by the Minister of Education. The board seldom exceeds five in the number of its members. The teacher of anatomy in the Bildungsanstalt takes part in the examination of male candidates, and a female teacher of turning is always a member of the board when women are examined. The candidates are of three classes: (*a*) Those who have already been found competent to be installed as teachers in the schools; (*b*) students who have completed five semesters at a university; (*c*) persons of sufficient age (twenty years in the case of men, eighteen years in that of women), not teachers, who have had a good school education.

The examinations are both theoretical and practical. The theoretical examinations are both written and oral. The written examination consists in the preparation, within a limited time and without the assistance of books or persons, of a thesis on such questions relating to school gymnastics as the examiners may select. The candidate is examined orally on his knowledge in relation to the most important points in the history of turning, particularly of school turning; in the literature and technical language of turning; on the kinds of exercise adapted to pupils of different ages and states of proficiency; on the principles involved in the construction and use of the various gymnastic appliances; on human anatomy, physiology, and hygiene, and their relation to gymnastics; and on the means of rendering first aid to the injured. In the practical examination the candidate is required to show what degree of expertness he possesses in the exercises made use of in school turning.

THE ROYAL INSTITUTE FOR TRAINING TEACHERS OF TURNING.

As has already been stated, this institution, known as the civil section of the Centralturnanstalt till 1877, dates from 1851. Since the separation of the military and civil sections in 1877, the latter has been known as the *Königliche Turnlehrerbildungsanstalt.* Prof. Dr. Carl Euler, who, though not the titular "director" of the Bildungsanstalt, actually directs its daily affairs, is a highly accomplished teacher, and one of the best known German writers on turning. He has occupied his present position as the chief normal teacher of turning in Prussia since the year 1860, when he was called from Schulpforta to take charge of the civil section of the Centralturnanstalt, of which Rothstein was then the head. The writer is deeply indebted to Professor Euler and his assistant, Oberlehrer Eckler, for many kindnesses and much valuable information concerning gymnastics in Berlin and Prussia. Messrs. Euler and Eckler not only conduct most of the theoretical courses in the Bildungsanstalt (with the exception of the course in anatomy and physiology, which is given by Dr. Hoffmann), but they are also charged with the inspection, as regards turning, of the schools in all the provinces of Prussia. The number of assistant teachers in the Bildungsanstalt varies with the number of pupils from year to year. In the winter course of 1883-'84, five male assistants were connected with the institute, and an equal number of female assistants gave practical instruction in the summer course of 1884. The winter course for men begins in October of each year, and lasts six months; the course for women begins at the close of the Easter vacation and continues for three months.

Since 1879 the institute has occupied a building of its own at 229 Friedrichsstrasse. This building is a model one of its kind. It consists of a main building two stories high, with an L one story high. On the first floor there are, besides several reception rooms and the living rooms of the janitor, three rooms appropriately fitted for gymnastic exercises. One in the main building is for the use of girls and women, and is 65 feet long, 32.5 feet wide, and 17.8 feet high; another, for the use of school children belonging to the model classes, is 81.25 feet by 40.6 feet; and the third, for the use of males, is 91 feet by 47.7 feet. The principal rooms on the second floor in the main building are the waiting and cloak rooms, a large office, two lecture rooms, a museum containing a collection of models of a great variety of gymnastic appliances, and a library.

The examinations of the Turnlehrer Prüfungs Kommission are held in the rooms of the Bildungsanstalt.

Courses of lectures are given in anatomy, physiology, and dietetics; on first aid to the injured; on the history of bodily exercises and the science and methods of turning; and on the construction and use of apparatus. The practical instruction comprises lessons and practice in free gymnastics; exercises with "hand apparatus"—dumb bells, wands, and the like; exercises on the heavy gymnastic appliances; fencing and sword-play, and swimming. The pupils of the institute are required to conduct classes in gymnastics, under the supervision of their instructors, in several of the city schools. As might be expected, numerous systematic works in the form of handbooks and manuals on all branches of turning have been published.

The systems of school turning in the other states of the German Empire do not differ very widely or essentially from that in vogue in Prussia. Each of the principal states, too, maintains a Turnlehrerbildungsanstalt. There is one at Dresden, for the Kingdom of Saxony, which dates from 1850; that at Stuttgart, for the Kingdom of Würtemberg, was founded in 1862; that for the Grand Duchy of Baden, at Carlsruhe, was established in 1869; and the one at Munich, for the Kingdom of Bavaria, was opened in 1872.

MILITARY TURNING.

Gymnastic exercises constitute a considerable and important part of the preliminary training of officers in the cadet and war schools, and of the drill to which recruits and soldiers in the army are subjected. Military drill of the technical and special sort is not a prominent feature in the course of the six preparatory schools for cadets (*Voranstalten des Cadetten Corps*), whose pupils, from ten to fifteeen years of age, are arranged in five classes, corresponding to the classes Sexta to Tertia, inclusive, of a Realgymnasium. The boys of the lower classes have gymnastic instruction adapted to their age and strength, and are encouraged to engage in out-of-door sports, such as foot ball, tug of war, and snowballing, during their play hours. Only the boys in Unter- and Obertertia are allowed to drill with muskets. At Lichterfelde the eight hundred and eighty youths are organized as four battalions of infantry, and much attention is given to infantry drill and evolutions, target practice, gymnastics, fencing, and riding. The pupils in the war schools are also thoroughly drilled in the above-mentioned branches of physical training. Two hundred lieutenants are annually trained as leaders of military turning at the *Königliche Militärturnanstalt* in Berlin.

Gymnastics are also taught in the *Militärreitinstitut* at Hanover. This institute includes a riding school for officers and a riding school for under-officers. The pupils in the former are lieutenants, and in the latter under-officers, who are mostly detailed from the Prussian cavalry, though a few are drawn from the field artillery. The number detailed annually to each school is eighty-three. The majority of these return to their regiments after a year's instruction, while the remainder, twenty-nine officers and twenty-eight under-officers, stay a second year at the institute.

The Militärturnanstalt.

The system of gymnastic instruction originally adopted as an essential factor in the training of the Prussian soldier was that of Ling. In 1845 General Von Boyen, the Minister of War, who had three years before joined his colleagues, Von Rochow, Minister of the Interior, and Eichorn, Minister of Education, in urging upon the King the views expressed in the epoch-making cabinet order, sent two officers, one of whom was Rothstein, to investigate the nature and working of the Swedish system of gymnastics, especially as regarded its military side. Rothstein and his companion repaired to Stockholm, went through the regular ten months' course of instruction in the Royal Central Gymnastic Institute, which had been in operation since 1814, and graduated as teachers of Ling's gymnastics. They then spent three months at Copenhagen in the Danish Royal Central Institute, whose date of establishment is 1806. They returned to Berlin in June, 1846, and early in 1847 the War Department adopted the main recommendations of their report by ordering the establishment of a Prussian central institute for the gymnastic instruction of the army. This institute was opened in Berlin October 1, 1847, with eighteen officers as pupils. The revolutionary outbreak of 1848 caused the suspension of the institute for three years. In 1851 the Königliche Centralturnanstalt, to which allusion has already been made, was opened in Berlin with Rothstein at its head.

Although Rothstein's opponents were able to defeat his efforts to supersede the Jahn, Eiselen and Spiess gymnastics, as regarded school gymnastics, the system of military gymnastics introduced by Rothstein was never fully abandoned by the War Department. In the Militärturnanstalt of to-day one does not find the horizontal bar or the parallel bars in use; and various pieces of gymnastic apparatus are still used there and throughout the army, which are seldom, if ever, used in Volksturnen or Schulturnen.

Two five-months' courses are annually given at the Militärturnanstalt. The number of officers enrolled at one time as pupils is usually one hundred. Lieutenant-Colonel Von Dresky is at present the director of the institution. His assistants, including a medical officer who lectures on anatomy and physiology, are all army officers. Practical instruction is given in free gymnastics, heavy gymnastics, jumping, sword-play, bayonet exercise, and in what may be termed "applied military gymnastics" (*Hindernissturnen*), in which squad exercises in clearing ditches and scaling intrenchments, walls, and spiked fences, occupy a prominent place. The training given at the Militärturnanstalt is such that those officers who complete its course are thoroughly fitted, on returning to their regiments, to give practical instruction to their subordinates.

In the gymnastic drill of the troops, the under-officers play an important part; but they learn and perform their duties as teachers of gymnastics under officers who have had the benefit of the Berlin course. All officers of infantry are required to be familiar with the principles of military gymnastics, and the younger officers must be able to teach and practice them.

Peculiarities of Military Turning.

The following statements, derived from the latest "*Vorschriften über das Turnen der Infanterie*," may serve to indicate the salient features of military turning, at least so far as the infantry arm of the service, which includes more than 230,000 men and officers, is concerned:

Gymnastic exercises constitute an essential factor in the military training of the individual man. They should not only increase the strength, agility, and endurance of his body, but should strengthen his will power, resolution, self-confidence, and courage, and call forth a healthy spirit of emulation. In order to attain these ends, the soldier must be taught the natural, sure, and energetic use of his limbs by means of properly devised exercises. These exercises are divided into (*a*) free and weapon exercises, (*b*) exercises with gymnastic machines (*Rustübungen*), and (*c*) exercises in applied turning, by which are understood exercises to render soldiers able to surmount artificial or natural obstructions in the field.

Turning should be practiced by all the men from the beginning of their term of service, due regard being had to individual peculiarities and circumstances. During the entire term of service the free and weapon exercises are to be pursued as exercises for the promotion of the soldier's health. In the course of every hour devoted to gymnastics, all parts of the body are, so far as possible, to be brought equally into play. In judging of the excellence of the exercise, strength, dexterity, and the carriage and control of the body are to be considered, rather than the difficulty of the exercise. The performance of gymnastic tricks and feats is never to be considered the aim of the exercises.

The free movements are those which are performed without the aid of any apparatus. They lie at the foundation of the bodily training of the soldier, both as regards drill and gymnastics. They are the especial means for suppling the stiff joints of the raw recruit. The free movements are to be arranged in groups, so that head, arms, back, legs, and feet shall be exercised in equal measure. Exercise in the quickstep, 165 to 175 steps in the minute, are included in the free movements.

Weapon exercises (*Gewehrübungen*) are defined as exercises in which the musket is used for the further development of the soldier's strength. In these exercises the musket is used in something the same way that the staff or wand is used in light gymnastics. The exercises are of two sorts—with both hands and with one hand. In the one-hand exercises the left and the right hands must be equally taught.

The principal machines employed in the *Rustübungen* (which is a Ling-Rothstein word for the Geratübungen of the turners) are the horizontal beam; the spring-board; the cross-tree, or beam, which resembles the horizontal bar; the ladder-plank; the inclined ladder; the leaping-table; the vertical ropes and poles, for climbing.

In the applied military gymnastics the soldiers are taught to leap ditches and barriers, and to scale walls, fences, and stockades of various kinds. In these exercises the men carry their muskets and side arms, and are divided into larger and smaller squads, which are, of course, required to keep step and time as much as possible. These exercises are very useful, and by no means easy in some of their branches, yet it is astonishing to a civilian to witness the celerity, precision, and certainty, with which a squad of a dozen men will surmount a wall or a high, spiked fence, or cross a wide, deep ditch on a narrow, shaky bridge.

Rothstein, in his account of the Centralturnanstalt published in 1861, describes the "obstructed running track" (*Laufbahn mit Hindernissen*) in which the pupils of the institute were exercised in "applied gymnastics." The track was U-shaped, 195 paces long, and 18 feet broad. The obstructions were arranged in the following order: (1) A ditch 6 feet wide, for the running leap; (2) a mound of earth 3 feet high and 4 feet wide at the base, for the high jump; (3) a ditch 12 feet wide, for the long leap; (4) a mound 6 feet high and 10 feet wide at the base, on the edge of a ditch 12 feet wide, for the "deep leap"; (5) a board fence 5 feet high, to be vaulted over; (6) an "escalading stage," 12 feet high and 6 feet wide at the top, to be climbed by ladders, ropes, or poles, and jumped or dropped from; (7) a ditch 10 feet deep and 9 feet wide, with an escarpment wall rising 4 feet above the hither edge of the ditch, and bridged by a shaky beam; (8) a palisade 7 feet high, of sharpened planks; and (9) a glacis. A section of twelve men in three ranks of four files each, the men having muskets, side-arms, and knapsacks, usually made the entire course from end to end in three to three and a third minutes. Without weapons or knapsacks, four men, each doing his best to outstrip his fellows, usually covered the course in sixty to seventy seconds; while a few individuals were able to cover the course in forty-three to forty-five seconds.

The following extract from a circular on the teaching of gymnastics in the elementary schools, addressed to the superintendents and inspectors of schools in the district of Liegnitz, province of Silesia, in 1871, by the section for church and school affairs, may serve as an indication of the esteem in which turning is held by those most concerned with educational affairs:

> It is acknowledged everywhere by soldiers and civilians that the astonishing accomplishments of our armies in the late war, especially their thorough discipline, exhibited in the most cheerful and self-sacrificing manner, their skill in overcoming natural and artificial obstacles in the enemy's country, their courage and calmness in battle, the resolution with which they bore pain and privation, must, in a large measure, be attributed to the gymnastic training of the rank and file.

As has been well said, "Hardly any army deserves better than the Prussian-German the name *Exercitus*." Prussia, in the interval between Jena and Sedan, demonstrated most clearly and strikingly the power and worth of comprehensive and scientific "training." Even the English are beginning to doubt the infallibility of the notion of which they have been so fond, "that you come to do a thing right by doing it, and not by first learning to do it right and then doing it." It is a conspicuous merit of the Prussian scheme of national education, that both in mental and physical training little or nothing is left to the rule of thumb.

It may fairly be doubted if any modern nation can vie with Prussia in ability to mobilize its strength; nor can it be doubted that her system of physical training has proven a very considerable factor in developing her power to transform her potential energy into work.

It is impossible that Prussian turning, reaching, as it does, nearly a fifth of the entire population of the kingdom, through the instrumentalities of the school, the army, and the Turnerschaft, should not exercise a powerful influence upon the national life and development.

A belief in the validity of Prussian methods has led to a more or less general and close imitation of them throughout Germany. And France has, since 1870, introduced gymnastic training into the plan of work ordained for its system of public schools.

If physical training should ever be pursued intelligently and systematically in the schools of any American State or city, many of the same problems with which the educational authorities in Germany, Switzerland, Sweden, and France, have been so deeply engaged, will inevitably present themselves. The writer is far from thinking that such problems can be satisfactorily solved by the attempted introduction of any unmodified foreign system of gymnastics or athletics. But he is firmly convinced that whoever may be impelled or called upon to attempt to provide an adequate remedy for the present lamentable neglect of physical training in American schools and colleges, can readily save money, time, and trouble, if they will but study the German system of turning; "for there can be no doubt," to borrow the words of Prof. Du Bois-Reymond, "that German turning, in its wise mingling of theory and practice, exhibits the happiest, yes, the most adequate solution of the great problem with which pedagogics has been busy since Rousseau, a truth which, after a short obscurity, is now hardly contested, but the physiological principle of which a few are beginning to understand."

THE NORTH AMERICAN TURNERBUND.

The largest association of turners in the world, outside of the Deutsche Turnerschaft, is that formed by the German gymnastic societies of the United States, under the name of the North American Gymnastic Union, or Turnerbund. The aims of the Turnerbund are most gloriously broad and general. The sole and simple end of its members is "to aid each other in rearing a people strong in both body and mind." As a means to the furtherance of this end, the framers of the platform and statutes of the Turnerbund, which were adopted at its national convention held at Davenport, Iowa, in 1884, pronounce in favor of "a thorough reform of social, religious, and political life."

The maxims and demands expressed in the declaration of principles of the Turnerbund are held "to form the programme for the realization of a system of pure popular sovereignty," under which "not only everything should be done for the people, but also by the people." This programme seems to us so fantastic, so impracticable, so entirely irrelevant to the legitimate purposes of a "gymnastic union," that we shall content ourselves with the bare mention of a very few of its main features, and confine our attention chiefly to the field of practical endeavor, in which the Turnerbund has achieved substantial and really commendable results.

The officers and members of the gymnastic union are "earnestly admonished" to make such propositions as follow, the subject "of special and thorough discussion"; "Senate and Presidency are but copies of monarchical institutions, being undemocratic and unrepublican, and should be abolished." The general convention of the gymnastic union recommends, "as proper means of relieving public distress and of ameliorating social conditions, the protection of labor against spoliation, and securing to it the real product thereof; sanitary protection of citizens; a prohibition of the abuse of employing the labor of children for industrial purposes; a cessation of all further land grants or sales to individuals and corporations; free instruction to everybody; a progressive income tax, and a legacy or succession duty or tax; abolition of all monopolies; a thorough reform of our judicial system; the abolition of all indirect taxation."

The practical aims of the Turnerbund are well set forth in sections 21 to 23, inclusive, of its statutes. They read as follows:

21. It is one of the chief aims of the gymnastic societies, and of the gymnastic union, to labor for the introduction of systematic gymnastic training into the existing schools, since such training is indispensable to the thorough education of the young.

22. It is therefore obligatory upon the gymnastic societies to see that their gymnastic exercises are conducted according to rational principles, and to take special care to employ only such persons as teachers of gymnastics, supervisors of exercises (Turnwarte), and leaders of practice sections (Vorturner) as are thoroughly qualified to understand and teach gymnastics in harmony with those principles.

It is furthermore the duty of the societies to labor in their own sphere for the establishment and perfection of good German-English schools, in which music, singing, drawing, and gymnastics receive full attention, and to work in favor of compulsory school attendance; and lastly to take pains to have the German language taught in the public schools.

23. It is obligatory upon the societies to provide for the further education of their members by arranging for instructive addresses, lectures, or discussions once a month; and such topics chiefly shall be selected for this purpose as relate to the resolutions or principles of the gymnastic union.

In January, 1885, the North American Turnerbund consisted of 213 vereine, with a total membership of 21,809, an increase of 2,096 over the previous year. In the Turnschulen of the Bund, 12,228 boys and 4,005 girls received instruction in gymnastics during the year 1884-'85. The Turnschulen, which are maintained by the turnvereine, have come very generally into vogue within the last ten years. They have been established for the purpose of securing to the children of German and German-American parents instruction in the German language and literature, as well as in the ordinary branches of a common school education and gymnastics. Very frequently the children attend a public school and a Turnschule at the same time, the session of the latter being held after the completion of the daily session of the public school. The gymnastic societies in many of the larger cities, like New York, Chicago, Saint Louis, Milwaukee, and San Francisco, have dramatic, musical, and art sections. The New York Turnverein, for instance, supports an evening art school, with classes in drawing and modeling.

The Turnerbund owned property worth $2,409,375 in 1885. This represented a total indebtedness of only $840,427. Its Turnhallen (gymnasia) numbered 140, an increase of 13 over the previous year. Its trained and salaried teachers of gymnastics numbered 98.

The teachers of gymnastics receive their special professional training in the *Turn lehrer Seminar*. The gymnastic aims and methods of the Turnerbund and its teachers are closely modeled after those which obtain in Germany. The Turnlehrer Seminar is, in the writer's opinion, the best normal school for teachers of gymnastics in the United States. It has for some years had its headquarters at Milwaukee, Wis., and been under the charge of Director G. Brosius. It was formerly located in Chicago, and still earlier in New York.

It is interesting to note that a grandson of "Father Jahn" is one of the eighteen pupils who constitute this year's class at the Milwaukee Seminar. Jahn's son has lived in poverty and obscurity for many years in Baltimore, Md. He receives an annual stipend from the Turnerbund, which has adopted his son, the youth above referred to, as its foster child.

The course of instruction given in Milwaukee approximates, on the whole, so nearly in character to that of the Turnlehrerbildungsanstalt in Berlin that it is unnecessary to characterize it further. Graduates of the Seminar are now required to speak and read English.

Thus far the Turnerbund has made but little progress toward bringing about the introduction of gymnastic instruction into the public schools. Meager results, not worth mentioning in comparison with what may be observed in almost any German city, have been attained in the cities of Milwaukee, Saint Louis, and Cleveland, where feeble experiments in giving instruction in calisthenics have been made.

It is nearly a year since the committee on course of study and school books of the board of education of the city of New York voted in favor of testing a plan, which emanated from the Turnerbund, for the introduction of gymnastic training into the public schools of that city. It was vôted to furnish three schools with gymnastic appliances at a cost not exceeding $94 for each school, and that "an instructor be employed, at a salary of not more than $50 per month, to take charge of these schools for one year, under the direction of the city superintendent as to time, etc." As it was found that the committee had no right to vote an appropriation, physical training in the New York public schools remains in the same unsatisfactory condition in which it was before the vote was passed.

No city or town can secure physical training to its school children unless it provide gymnasia and specially trained and well-paid teachers. A salary of $50 per month, we need hardly add, will not secure competent teachers of gymnastics; and without competent teachers gymnasia are useless, or worse than useless.

The Turnerbund owns more gymnasia than do all the colleges of the country taken together, and its corps of teachers of gymnastics is made up of the best the country affords; yet the aims, methods, and achievements of the Turnerbund are almost unknown to the mass of men and women engaged in the education of American children. One would think from the utterances of some of the prophets and disciples of "physical culture" that the field of bodily education was white for the harvest. Such facts as those above cited seem to us to indicate that the field is only here and there ready for the sowing of seed.

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